```
Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                Database :
                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
5:
6:
7:
9:
110:
12:
                                                                                                                                                                                                                                                                                                            5883141 seqs, 28421725653 residues
                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                   US-10-781-979-6
1686
                                                                                                                                                                                                                                                                                                                                                                                                                  February 15, 2006, 03:31:18; Search time 8725 Seconds (without alignments) 10984.305 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                      1 gtgagtcctatgtttacaag.....atcaaggatataaccgttaa 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.7 Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                       11766282
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ຜ	
9	
~	
5	
50	
ñ	
Ħ	
ល័	

Result No. 1 2 3 3 5 5 6 6	Score 1686 1686 1466 1395.8 1395.8 970.4	Query Match 100.0 100.0 87.0 82.8 79.2 57.6 55.8 54.3	Length 1686 5980 3746 3727 4100 3752 3752 3931	1111166 B	ID CQ868316 CQ868311 AB074414 AB074413 AB112346 AB125059 AB161456 BTJEG65	Description CQ868316 Sequence CQ868311 Sequence AB074414 Bacillus AB074413 Bacillus AB112346 Bacillus AB112346 Bacillus AB1615059 Bacillus AB16156 Bacillus AB16156 Bacillus AB16156 Bacillus
21	1686	100.0	1686	00	CQ868316 CQ868311	
ω	1466	87.0	3746	٠,	AB074414	
4.	1395.8	82.8	3727	Н	AB074413	
ហ	1335	79.2	4100	_	AB112346	
6	970.4	57.6	3752	_	AB125059	
7	941.4	55.8	3931	_	AB161456	
8	914.8		4391	_	BTJEG65	
g	891.4		3668	_	AB185105	
10	839.6	49.8	3642	۳	AB193814	
11	792.4	47.0	127923	μ.	BTPBTOXIS	
12	784.8	46.5	4186	ш	BACISRH3	
13	784.8	46.5	4186	σ	E01905	
14	783.2	46.5	3684	щ	BTITOX	
15	783.2	46.5	3684	بر	BTTOXD2	
16	783.2	46.5	3684	6	I08884	
17	781.6	46.4	3535	σ	I06096	
18	774.2	45.9	4253	_	BACISRH4	

Query Match Best Local Similarity

100.0%;

Score 1686; DB 6; Length 1686; Pred. No. 2.8e-296;

ALIGNMENTS

	CDS	FEATURES source	REFERENCE AUTHORS TITLE JOURNAL	KEYWORDS SOURCE ORGANISM	RESULT 1 CQ868316 LOCUS DEFINITION ACCESSION VERSION
/note="unnamed protein product" /codon_start=1 /ctansl_table=11 /transl_table=11 /protein_id="cAH33953.1" /protein_id="cAH33953.1" /protein_id="cAH33953.1" /protein_id="cAH33953.1" /protein_id="cAH33953.1" /transl_tation="MSPMFTSSTKWTLKIETTDYEIDQAAISIECMSDEQNPQEKIML /translation="MSPMFTSSTKWTLKIETTDYEIDQAAISIECMSDEQNPQEKIML /translation="MSPMFTSSTKWTLKIETTDYEIDQAAISIECMSDEQNPQEKIML /translation="MSPMFTSSTKWTLKIETTDYEIDQAAISIECMSDEQNPQEKIML /translation="MSPMFTSSTKWTLKIETTDYEIDQAAISIECMSVEKIMVPNDLAYMQ pRPSCGDYNRCESSSQYVSQGYFTPTDGYAPGNOLACPONIORACHAYVCCHDRHPFDPHIDT GEVDTWNWGIDVLLKISNPDGYATVGNLEVIEGGPLTGEALAHVKQKEKKMKOHMEK KRWETQQAYDPAKQAVDALFTNEGSHLYHITLDHIQNADRLVQSIPVYYHWLPNAPG MNYDVYQELNARIMQGYNLYDARNVITNGDFTQGLQGWHATGNAAVQQMDGASVLVLS KWSAGVSQNLHAQDHHGYVLRVIASIELLCMQSYDNNNULHTGNAYEGSYNGNYNQN TSDVYYQGYTNNYNQDSSNNYNQNYTNNDDLHSGCTCNQGHNSGCTCNQGYNR"	/organism="Bacillus thuringiensis" /mol_type="unassigned DNA" /db_xref="taxon:1428" 11686	Athenix Corporation (US) Location/Qualifiers 11686	1 Carozzi,N., Hargiss,T., Koziel,M.G., Duck,N.B. and Carr,B. Delta-endotoxin genes and methods for their use Patent: WO 2004074462-A 17 02-SEP-2004;	4555	CQ868316 1686 bp DNA linear PAT 13-SEP-2004 Sequence 17 from Patent WO2004074462. CQ868316 CQ868316.1 GI:51998362

```
GCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                          GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                         CGTTACGGGAAAGAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                              GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                 AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAA
                                                                                                                                                                               TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                        GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                       ACACGTTATCGAGTAAGAGGGTTTGTGGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCAATAATCCTATTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                       TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                                                                              ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                1080
                                 1020
                                                  1020
                                                                   960
                                                                                  960
                                                                                                    900
                                                                                                                    900
                                                                                                                                                     840
                                                                                                                                                                      780
                                                                                                                                                                                       780
                                                                                                                                                                                                        720
                                                                                                                                                                                                                         720
                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                         660
                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                   REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                       RESULT 2
CQ868311
LOCUS
                                                                                                                                                     DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                            8 8 8 8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                 ર્
                                                                                                                                                                                                                                                                                                                                                                                                                      음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                    FEATURES
        Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 1686; Conservative 0
                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                  1621
                                                                                                                                                                                                                                                                                                   1621
                                                                                                                                                                                                                                                                                                                    1561
                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                      1501
                                                                                                                                                                                                                                                                                                                                                                       1501
                                                                                                                                                                                                                                                                                                                                                                                       1441
                                                                                                                                                                                                                                                                                                                                                                                                       1441
                                                                                                                                                                                                                                                                                                                                                                                                                        1381
                                                                                                                                                                                                                                                                                                                                                                                                                                         1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1081
                                                                                                                                                                             CQ868311
Sequence 12
CQ868311
CQ868311.1
                                                                                          Carozzi,N., Hargiss,T., Koziel,M.G., Duck,N. Delta-endotoxin genes and methods for their Patent: WO 2004074462-A 12 02-SEP-2004; Athenix Corporation (US)
                                                                                                                                            Bacillus thuringiensis
Bacillus thuringiensis
Bacteria; Firmicutes; F
                                                                                                                                                                                                                                                                                  TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGATGACCTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                       CCTGGAAAAGGGTATGTAACGATGATGGATGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA
                                                                                                                                                                                                                                                                                                                                                               ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                  CGTTAA
                                                                                                                                                                                                                                                                                                                                                                                        group.
                                                                                                                                                                                                                                                                  1686
                                                 /organism="Bacillus thuringiensis"
/mol_type="unassigned DNA"
/db_xref="taxon:1428"
                                                                                  Location/Qualifiers
                                                                                                                                                                                                from
                                                                                                                                                                                GI:51998357
                                                                                                                                                                                               Patent
        <u>,</u>
                                                                                                                                              Bacillales;
        Score 1686; DB 6;
Pred. No. 1.9e-296;
; Mismatches 0;
                                                                                                                                                                                                5980 bp DNA
WO2004074462.
                                                                                                                                               Bacillaceae;
        Indels
                        Length
                                                                                                                                                                                                         linear
                                                                                                                      .B. and
                                                                                                                                               Bacillus;
                          5980;
                                                                                                                      Carr, B
                                                                                                                                                                                                          PAT
         0
                                                                                                                                                                                                         14-SEP-2004
         Gaps
                                                                                                                                               Bacillus
                                                                                                                                                                                                                                                                                                                                                                       1560
                                                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1140
                                                                                                                                                                                                                                                                                    1680
                                                                                                                                                                                                                                                                                                                                                       1560
```

8 8 8 8

421 421 361

361 301 301 241 241 181 181 121 121 61 61

음 성

밁 ঠ 밁 ঠ 8 ર્

음 성

밁 - 5

Matches

1686;

8 8 8 8

841

781 781

901

8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4

661

601 601

721

721 661 541 541 481 481

음 성

1021 961 961 901

0

_	ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140	1081
	CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA 1080	1021 3329
	ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT 1020	961 3269
	GAGTTAÇACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG 960	901 3209
	ACACAACCAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA 900 	841 3149
	GCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAA 840	781 3089
· · · · · · · · · · · · · · · · · · ·	TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG 780	721 3029
	GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA 720 	661 2969
	AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCCGGAGAA 660	601 2909
	TATCCTACACCAACAGATGGATATGCTCCCGATATGTATG	541 2849
	CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG 540	481 2789
	CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG 480	421 2729
	ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA 420	361 2669
	GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATAT 360 	301 2609
	TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT 300	241 2549
	CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA 240 	181 2489
	AAAATAATGTTATGGGATGAAATAAAACTGGCAAAACAACTTAGTCAGTC	121 2429
	GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120	61 2369
	GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT 60 	1 2309

 8
 8
 8
 9
 8
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9

FEATURES source	REFERENCE AUTHORS TITLE JOURNAL	REFERENCE AUTHORS TITLE JOURNAL	SOURCE ORGANISM	ACCESSION VERSION	RESULT 3 AB074414 LOCUS DEFINITION	Db 39	0у 16	Db 39	0у 16	w		ш	0у 15	ω 1	-	Qy 13	(J) i	Ov 13	_L	Db 35	0у 12	34	11	Db 33
Kita-ku,Sapporo-shi, Hokkaido 060-85 (E-mail:ito-t@abs.agr.hokudai.ac.jp, Location/Qualifiers 1. 3746 /organism="Bacillus thuring /mol_type="genomic DNA"	3746) K., Asano,S. an on OV-2001) Takesh	1 Ito,T., Sahara,K., Asano,S. and Bando,H. Cloning and Expression of Novel Crystal Protein Genes from Bacillus thuringiensis subsp. alzawai Encoding a Mosquitocidal Proteins Unpublished	Bacillus thuringiensis serovar aizawai Bacillus thuringiensis serovar aizawai Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus; Bacillus cereus group.	complete cds. AB074414 AB074414.1 GI:16945771		189 CGTTAA 3994	81 CGTTAA 1686	29	21 TCCGGTTGCACATGTAACCAAGGG	69 TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCAT 39	61 TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCAT 1620		01 TATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGGTATACAAACAA		A) TOTATICA ACCATATICATA ACAATA ACAATA ATAA CONCOCACACACATA ATATICATA ACCACACACACACACACACACACACACACACACAC	81 GTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGATAG	9 ACTTCTTGCGAAGAAGAATATATGACAAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT 3	69 CCTGGAAAAGGGTATGTAACGATGATGGATGGTAATGGAAAGCAGGAAACACTTAAGTTC 3628 21 ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT 1380	1 CCTGGAAAAGGGTATGTAACGATGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC 132	09 AACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGA 3568	01 AACTTGCATGCTCAAGATCATGGATATGTGTTACGTG	49	41	

```
Query Match
Best Local Similarity
Matches 1570; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SdS
                                                                                                                                                                                                                                                                                                                                                                                                                  2121
                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGAATGAACAAAATCCTCAGGAA
                         GACATATATGGAACTATATTTCCAACCTATATCTATCAAAAAATAGATGAATCTAAATTA
                                                         GACATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTA 351
                                                                                                                                                                                                                                                                                                                                            GAAATAGATCAAGCGGCCATTTCGATAGAATGTATGTCAGATGAACATTCTCCTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGAGTCCTATGTTTACAAATGGTACGAAAAATACGCTGAAAATAGAAAACGACAGATTAT
                                                                                                                                                                                                                                                                     CTCCAAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                   ATCATAGGATCCAATAATCCTATTTTAAAAGGAAAATTTCTACAGATGCGTGGAGCACGA
                                                                                                                                                                                                                      CTCCAAAATGGGGACTTTGGAGACTTTTATGGAAATGATTGGAAATTCGGTAATAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="putative mosquitocidal toxin"
/product="putative mosquitocidal toxin"
/product="putative mosquitocidal toxin"
/product="putative mosquitocidal toxin"
/db_xref="GI:16945772"
/db_xref="GI:16945772"
/db_xref="mayrenkusyrejilesssnununpurypeanungsvsalisicDll
swirenkusyrejilestenkusyrejylpyleaklisticptinyspigolyk
siirksyadsylsdaickpildkiknyrejylpyleaklisticptinykpiloktunuspigolyk
siirksyadsylsdaickpildkiknyrejylpyleaklisticptiylgagigolyk
yfelserdeneilgislarnnaglillpyfcaskycylltiphoyadsolytengepflaap
nvrsblispnscolftigileskarnnaglillpyfcaskycylpylveliteiylphoyadsolytengkyrg
nkferrentityldiiaifqotydpkkyplpylveliteiylphoyadsolytengkyrg
nkferrentityldiiaifqotydpkkyplpylveliteiylphoyadsolyteyrg
nkferrentityldiiaifqotydpkkyplpylveliteiylphoyadsolyteyrg
splindlephoyadbifkieskalmnivoshinapesyrosadefesstaffiyltydans
GLSSMTITSKLPGIKNPEPSYRDYSHRLSNACVGAGNSRINVYGWTHTSMSKYNLIY
pdkitgolfbyldisphoyadsolfypyldifyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighoffyldighof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="40orf2"
/codon_start=1
/transT_table=11
/product="Cty40ORF2 protein"
/protein_id="BAB72019.1"
/db_xref="GI:16945773"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="cry40A"
/codon_start=2
/transl_table=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="methodrantchiethdyeidqaaisiecmsdehsdkekmmlwde
/translation="methodrantchiethdyeidqaaisiecmsdehsdkekmmlwde
/trankllsqsrnlqqdegdeygndwkegnniiigsnnsifklehedkekmmldhygit
ifftyiigkidesklkeytryrvrgeydgskollehmytrykeldamnyendlaymq
pnescedsrcesssqyvsqgyperptogyapdxxcesssbkkhymchdheppdhidy
pnescedssrchyfkisnpdgyatlgnleviegeltgealthvkqkekkmkqhmek
geldynnvrgidvlekisnpdgyatlgnleviegeltgealthvkqkekkmkqhmek
grwetqoaydpakqavdylftfyreqelhyhitldyigtldwagkappiymrgyapapg
mnydgygglharimgaynlrviakkxegegkgyvmmdcngngetlkefsceegymtk
tvevpeesdrveleigetegteyvdsellchogyasnnnehtgnwyggsyngnynqn
tvevpeesdrveleigetegteyvdsellchogyasnnnehtgnwyggsyngnynqn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="40orf2"
2070. .3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TSDVYHQGYTNNYNQNSSNMYNQNYTHNDDLHSGCTCNQGHNSGCTCSQG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="cry40A"
<1. .2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'isolate="Bun1-14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       serovar="aizawai"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87.0%;
93.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            xref="taxon:1433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _table=11
                                                                                                                                                                                                                                                                   -TGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1466; DB 1;
Pred. No. 2e-256;
0; Mismatches 105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                      2360
                                                                                                                                                                      291
                                                                                                                                                                                                                                                                                                                2240
                                                                                                                                                                                                                                                                                                                                                                                                             2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2120
                           2420
                                                                                                                                                                                                                                                                231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                멍
                                                                                Ş
                                                                                                                                          밁
                                                                                                                                                                             S
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                       ద్ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                            1311
                                                                                                                                                                                                                                            3320
                                                                                                                                                                                                                                                                                            1251
                                                                                                                                                                                                                                                                                                                                         3260
                                                                                                                                                                                                                                                                                                                                                                                    1191
                                                                                                                                                                                                                                                                                                                                                                                                                                       3200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352
CGAGTTGCTTTGTATGCAAGGATATGATAACAATAACATGCCTGCACACGGGTAATATGTA 1490
                                                                           ACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGA 1370
                                                                                                                                                                                                                                                                     AAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAAC 1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATGTCATCACAAATGGTGACTTTACAAAAGGATTACAGGGATGGCACGCAGCCGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAA 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACG 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCATTAACGCATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAA
                                                                                                                                                                                                                                                                                                                                            GGTATCTCAAAATCTGCATGCTCAAGATCATCATGGATATGTTACGTGTGATTGCTAA
                                                                                                                                                                                                                                                                                                                                                                     GGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAGCGGTACAACAGATCGATGGCGCTTCTGTATTAGTTCTATCAAACTGGAGTGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTACAGTCGATTCCCTATATACACCATGACTGGTTACCGGGATGCCCCAGGTATGAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTACAGTCGATTCCCTATGTATACCATAATTGGTTACC-GAATGCTCCAGGTATGAACTA 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGAACAAGAGTTACACTATCATATTACTTTAGATTATATTC-AAACGCTGATCGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTTGGGAAACACAAGCCTACGATCCAGCAAAACAGGCTGTAGATACATTATTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGCATTGGCACATGTGAAACAAAAGGAAAATGGAAAATGGAAACAACACATGGAGAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGATGGATATGCTACATTAGGGAATCTAGAAGTCATTGAAGAAGGGCCACTAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGT 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAAT 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCCAAATGATTTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANACCATATACACGCTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATCTAAGATTG 2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGATAAAGATTTGAAATTA 411
                                               AAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACGTTTTATGTAGATAGCAT
                                                                                                                                               ACTGAAGTTCACTTCTTGTGAAGAAGGATATATGACAAAGACAGTAGAGGTATTCCCCAGA
                                                                                                                                                                                                                                          AAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGCAATCAGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATATGCAGCCTAATCCTTCATGTGGAGATTCTCGCTGTGAATCATCGTCCCAGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGTAACACGTTACGGAAAAGAAATTGATGCCATGATGAATGTTCCAAATGATTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2840
                                                                                                                                             3439
                                                                                                                                                                                                                                                                                                                                            3319
                                                                                                                                                                                                                                                                                                                                                                                                                                       3259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2540
```

중 유

밁

음 성

8 8 8 8

Ş

밁

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
AB074413
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cloning
39orf2 f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (14-NOV-2001) Takeshi Ito, Graduate school of Agriculture, Hokkaido University, Applied Bioscience; Kita 9-jyo, Nishi 9-choume, Kita-ku, Sapporo, Hokkaido 060-8589, Japan (E-mail:ito-t@abs.agr.hokudai.ac.jp, Tel:81-011-706-2487,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus thuringiensis serovar aizawai
Bacillus thuringiensis serovar aizawai
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB074413 3727 bp DNA linear BCT 14-JUN-2003 Bacillus thuringiensis serovar aizawai cry39A and 39orf2 genes for mosquitocidal toxin and Cry39ORF2 protein, partial and complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fax:81-011-706-2487
On Mar 12, 2002 thi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ito, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mosquitocidal Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ito, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AB074413.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AB074413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Insect Biotechnol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGATA 1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCA 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACAAACAACTATAACCAAAACTCTAGTAATATGTATAATCAAAAATTATACTCACAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGA 1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGCAAAGTTATAATGGAAATTATAATCAAAATACGAGCGATGTGTATCACCAAGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGCANAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGAGTTGCTTTGTATGCAAGGATATGCTAGCAATAATAACCCGCACACGGGTAATATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 3727)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from Bacillus thuringiensis subsp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           droup
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sahara, K., Bando, H. and Asano, S. and Expression of Novel Crystal Protein Genes cry39A and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sahara, K., Asano, S. and Bando, H.
                                                                                                                                                                                                                                                                                                      /gene="cry39A"
/codon_start=1
/trans1_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3745
                     /product="mosquitocidal toxin"
/product="mosquitocidal toxin"
/protein_id="BAB72016.2"
/db_xref="Gl:19386614"
/translation="mosyenkoneyeilndskksumsnpylryplandslasmontnyk
/translation="mosyenkoneyeilndskksumsnpylryplandslasmontnyk
/translation="mosyenkoneyeilndskksumsnpylryplandslasmontnyk
/translation="mosyenkoneyeilndskylryplandslasmontnyk
/translation="mosyenkoneyeilndskylryplandskeknone
gdhytyplandshylryplandslasmontnyk
/translasmontnyk
/tra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dub/
     PTDEKPLTYENYSHILSYMTSAQHFGDKKIGYTFAMMHESVDFDNRVDPDKITQIPAV
                                                                                                                                                                                                                                                                                                                                                                                                              /gene="cry39A"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="genomic DNA"
/isolate="Bun1-14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Bacillus thuringiensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002 this sequence version replaced gi:16945768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:19386613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 xref="taxon:1433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _species="aizawai"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sericology 71, 123-128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          aizawai Bunl-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         serovar aizawai"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3559
                                                  망
                                                                                             Ś
                                                                                                                                                           밁
                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2042
                                                                                                                                                           2582
                                                                                                                                                                                                                                                                                                                                                                 2462
                                                                                                                                                                                                                                                                                                           475
                                                                                                                                                                                                                                                                                                                                                                                                                 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
     652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \vdash
ACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAAATTTCTAAT 711
```

```
/translation="metsinikatikletidyeidqaaisiecmsnehsskeemmimde 
vkqakqlswsrnllyngdfedvsngwktsntieirnspvfkchylhwfgardidgtl 
fptyiyqkiessklkpytryrrgfvgsskdlklmvtrygkeidammindtampe 
tpscgdsrcesssryvsqgyftpvdyasgryaqqsngftkhvkchdhehpfdfhidt 
geldymynvgidvlfkisnpdgyatildhlevlegeflytgealihvkqkekkwkohmek 
krwetqqaydpakgavdalftneqeilhyhitldhiqnadrliqaipyvyhawi.pdapg 
myydgygeinqainqaxnlydarnvitngdftggttchhargamvqqxdbasylvls 
nwsagvsqulhvqehhgymlrviakkegfgkgyvtmmdchunetikftsceegymtk 
Tvevfpesdryrieigetegtfyvdsiellchggyasnnphftgmmyqqsynchynq 
Tsdvyhqgytnnynqnssnmynqnythnddlhsgctcnqghnsgctcsqg"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KGDYLQYGYVKQGPGHTGGDLVSMIRTDRLGINVYFPQPLDYRIRIRYSTSSNGYLYI
YSPNTKIVYLPPTTLVDGQPTFDPMDFSAFRVVEVPASFRASVAGYTNFTIEAGFGPV
YIDKIEFIPDNTTTLEYEGGRDLEKTKNAVNDLFTN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2051. .3727
                                                                                                                                                                                                                                                                                                                                                                                    /product="Cry390RF2 pro
/protein_id="BAB72017...
/db_xref="GI:16945770"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="39orf2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'gene="39orf2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein"
```

5 밁

중 음 중

밁 S 밁

Best Local Similarity CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG CAAGGGTATCCTACACC---AACAGATGGATATGCTCCCGATATGTATGCATGCCCGCAA ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTTGGCCTAT CCATATACACGTTATCGAGTAAGAGGATTTGTGGGTAGTAGAAGATCTAAAATTAATG ATTGATGGAACCCTATTTCCAACTTATATCTACCAAAAAATAGAAGAATCTAAATTAAAA ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA CTCCAAAATGGAGACTTTTCTG-----GGAATGATTGGACATTCGGTAATGATATTATC GAAATGATGTTATGGGATGAAGTAAAACAGGCAAAACAACTTAGCTGGTCTCGTAATTTA GAAATCGATCAAGCGGCCATTTCTATAGAATGTATGTCTAATGAACATTCTTCCAAAGAA GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA GTGAATCCTATGTTTATCAGTAATATAAAAAATACGCTAAAAATAGAAACGACAGATTAT GTGAGTCCTATGTTTACAAGTAGTACGAAAAAATACGTTAAAAATAGAAACGACAGATTAT AATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGAC GTAACACGTTACGGGAAAGAAATTGATGCCATGATGATGTTCCAAATGATTTGGCCTAT ATCCGAGAGAATAGTCCCGTTTTTAAAGGACATTACCTTCATATGTTTGGGGCAAGAGAT ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC CTCTACAATGGTGACTTTGAAGATGTATCAAACGGATGGAAAACAAGTAATACGATTGAG AATCGAGGTACAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGAC Conservative 82.8%; 90.1%; <u>..</u> Score 1395.8; DB 1; Pred. No. 1.1e-243; D; Mismatches 157; Length 9 Gaps 354 180 120 2641 2161 2101 2701 651 591 474 414 294 2221 2581 534 2461 2401 2341 2281 234 60 252 N

```
3722
                                                                                                                                    1612
                                                                                                                                                                                                                                                                                                                      1492
                                                                                                                                                                                                                                                                                                                                                                    3482
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       712
                                        GGATA 1676
                                                                                                                 GACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAA
                                                                                                                                                                                                                                                                                                             GAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGGTAT 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAAGTTCACTTCTTGCGAAGAAGATATATGACAAAAACAGTAGAGGTATTCCCCAGAA 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACA 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATCTCAAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAA 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTAT 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGATGGATATGCTACATTAGGGAATCTAGAAGTCATTGAAGAAGGGCCACTAACAGGA
GGATA
                                                                                         GACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAGTCAA
                                                                                                                                                                                  ACAAACAACTATAACCAAAACTCTAGTAATATGTATAATCAAAATTATACTCACAATGAT
                                                                                                                                                                                                            ACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGAT
                                                                                                                                                                                                                                                                           GGGCAAAGTTATAATGGAAATTATAATCAAAATACGAGCGATGTGTATCACCAAGGGTAT
                                                                                                                                                                                                                                                                                                                                                                  GAGTTGCTTTGTATGCAAGGATATGCTAGCAATAATAACCCGCACACGGGTAATATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                               GAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATGTAT 1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATCTCAAAACTTGCATGTCCAAGAGCATCATGGATATATGTTACGTGTGATTGCTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAATGGTACAACAAATGGATGGCGCTTCTGTATTAGTTCTATCAAACTGGAGTGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGA 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTTGGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGCATTAACGCATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCATTGGCACATGTGAAACAAAAGGAAAAAGAAATGGAAAACAACACATGGAGAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGAACCACTAACAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACGTTTTATGTAGATAGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAAGTTCACTTCTTGTGAAGAAGGATATATGACAAAGACAGTAGAGGTATTCCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAAGGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGCAATCGGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGTCATAACAAATGGTGACTTTACACAGGGACTAACGGGATGGCACGCAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAAT 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGGATATCAAGGGTTAAACGCACGTATCATGCAGGCGTACAATTTATATGATGCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATACAGGCGATTCCCTATGTGTACCATGCTTGGTTACCGGATGCTCCAGGTATGAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTTGGGAAACAAGCCTACGATCCAGCAAAACAGGCTGTAGATGCATTATTTACA
                                                                                                                                                                               3661
                                                                                         3721
                                                                                                                                  1671
                                                                                                                                                                                                                           1611
                                                                                                                                                                                                                                                                           3601
                                                                                                                                                                                                                                                                                                                                                                    3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       771
```

```
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AB112346
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ito,T., Sahara,K., Asumo, ...

Direct Submitssion

Submitted (12-JUN-2003) Takeshi Ito, Graduate School of
Submitted (12-JUN-2003) Takeshi Ito, Graduate School of
Agriculture, Hokkaido University, Department of Applied Bioscience;
Kita-9jyo, Nishi-9chome, Kita-ku, Sapporo, Hokkaido 060-8589, Japan
Kita-9jyo, Nishi-9chome, Kita-ku, Sapporo, Hokkaido 060-8589, Japan
(E-mail:ito-t@abs.agr.hokudai.ac.jp, Tel:81-11-706-2487(ex.2487))
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
2 (bases 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ito,T., Sahara,K., Asano,S. and Bando,H.
Cloning and Expression of Novel Crystal Protein Genes from B
thuringiensis subsp. aizawai Encoding Mosquitocidal Proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus thuringiensis serovar aizawai
Bacillus thuringiensis serovar aizawai
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AB112346 4100 bp DNA linear BCT 14-JUN-2003
Bacillus thuringiensis serovar aizawai cry40-like and ORF2 genes
for putative mosquitocidal toxin, hypothetical protein, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cereus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AB112346.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB112346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 4100)
o,T., Sahara,K., A
/COGON_BEART=1
//COGON_BEART=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tianblation="MASYQNKNEYEILKSSPNNTNIPNRYPFANDROMSPMSWNDCOG
SPMADVWESTASFTGJGJDLTTFLGEBSITGJNLLFSVJGKLLPSGONVASLSICOLL
SIIRKEVDESVLSDAYGDFNGVVNNYQTYJLTSLKKWLDAGKPTTGQLLTDVTKHFEF
SEREFNALLKGSLSRPKGEILLLPTYTGGANLHILLLRDFVQYKAVWEKELRTENVES
ELISPSFDYEGHFKEQLAEHINHCITWYQAGLNQIKESGTSTENWLKFNKFRRENTLS
VLDIIAIFPYDPENYKSETHIELSREVYTDPGYNGHAQNLTNGFNTLEANGTRGPG
LYWHLKKIDIFTDBYTEYSGASPVAILRGMAGTRHYEIYTGSSNTLQRISGTSUNVS
NIDFINSRIFIITSLARYALAGAAAGNPGSPRYRVSRVEFRSTGRYTFLYEVNSPGIS
SMTIESKLPGVKNANGFTDYEWRLSNNACVOFGTSRNVKYGWTHIKMGEGNYVYPKKI
TQIPAVKAMEIRGTSSVVAGPGHTGGNLVKMSYKSVMSIKFTCQQLKRYRVRIRYASD
GNCQLAMRRWRGGPGYVQEAHITVQRTFSGSMTYDSFKYLDIFTWPAEDYTFDLTIDL
ESGGALYIDKIEFIPDDLTTLEYEEERNLEKTKNAVNDLFTN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /transT_table=11
/product="putentive mosquitocidal toxin"
/protein id="BAC77648.1"
/db_xref="GI:31745044"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note="ORF2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="cry40-like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="cry40-like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  db_xref="taxon:1433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       serovar="aizawai"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="genomic DNA"
/strain="Bun1-14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:31745043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus; Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus
```

RESULT

ຫ

음 성 음 성 음

Ş 뭐 S 밁 Ş 밁 5 밁 S 밁 δ 밁 S 밁 ঠ 밁 δ 멍 ક 밁 S 밁 δ B S 밁 ঠ 밁 á

```
Query Match
Best Local Similarity
Matches 1454; Conserv
                                                                                                                                                                                                                           3119
                                                                                                                                                                                                                                                                                         3059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2339
                                                                                                3239
                                                                                                                                                                                                                                                                                                                                                         2999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2399
                                                                                                                                                                                                                                                                                                                                                                                                                        2939
 1012
                                                                                                                            892
                                                                                                                                                                                                                                                           772
                                                                                                                                                                                                                                                                                                                                                                                           652
                                                                                                                                                                                                                                                                                                                                                                                                                                                        592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATCGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACATTCTCCCAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
 GATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGA
                                GTACAGTCGATTCCCTATGTATACCCATAATTGGTTACCGAATGCTCCAGGTATGAACTAT
                                                                                              AATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTG
                                                                                                                              AATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTG
                                                                                                                                                                               CGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACA
                                                                                                                                                                                                                             GAAGCATTAACGCATGTGAAACAAAAGGAAAAGAAATGGAAACACACATGGAGAAAAAA
                                                                                                                                                                                                                                             GAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAAAAA
                                                                                                                                                                                                                                                                                           CCAGATGGATATGCTACATTAGGGAATCTAGAAGTCATTGAAGAAGGGCCACTAACAGGA
                                                                                                                                                                                                                                                                                                            CCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGT
                                                                                                                                                                                                                                                                                                                                                         ACCGGAGAATTAGATACAAATACAAACGTAGGTATTGATGTCTTATTTAAAATTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                              ACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAAATTTTCTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                         AATTCAGGTGAAAAACATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                            AATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATATGCAGCCTTAGCCCTTCATGTGGAGATTATCGCTGTGAATCCTCGTCCCGGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCCAAATGATTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACCATATACACGGTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAAATCTAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACCATATACACGTTATCGAGTAAGAGGGTTTTGTGGGAAGTAGTAAAGATTTTGAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATATATATGGAACTCTATTTCCAACCTATATCTATCAAAAAATAGATGAATCTAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAATAGGATCCAATAATTCGATTTTTAAAGGGAATTTTCTTCAGATGCGTGGAGCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCAAAATGGGGACTTTGAAGACTTTTCTGGAAATGATTGGACATTCAGTAATGACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCAAAATGG-----AGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79.2%;
90.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1335; DB 1;
Pred. No. 1.2e-232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 4100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                              . 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   411
                                                                                                3298
                                                                                                                              951
                                                                                                                                                                                                                             3178
                                                                                                                                                                                                                                                           831
                                                                                                                                                                                                                                                                                           3118
                                                                                                                                                                                                                                                                                                                                                           3058
                                                                                                                                                                                                                                                                                                                                                                                                                         2998
                                                                                                                                                                                                                                                                                                                                                                                                                                                        651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2398
                                3358
                                                                                                                                                                                                                                                                                                                           771
                                                                                                                                                                                                                                                                                                                                                                                           711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                            JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 6
AB125059
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뭥
                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1072
                                                                                                                                                                                                                                        Cloning and Exp
thuringiensis of
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AB125059
Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                         AB125059
                                                                                                                           2 (bases 1 to 3752)
Ikeya, T., Yamaya, K., Ito, T., Sahara, K., Asano, S. and Bando, H.
Ikeya, T., Yamaya, K., Ito, T., Sahara, K., Asano, S. and Bando, H.
Direct Submitssion
Submitted (24-OCT-2003) Tomonori Ikeya, Graduate School of
Agriculture, Hokkaido University, Department of Applied Bioscience;
Kita-Sjyo, Nishi-Schome, Kita-ku, Sapporo, Hokkaido 0608589, Japan
Kita-Sjyo, Nishi-Schome, Kita-ku, Sapporo, Hokkaido 0608589, Japan
(E-mail:ikeyan@abs.agr.hokudai.ac.jp, Tel:81-011-706-2487(ex.2487),
                                                                                                                                                                                                                                                                                                                                        Bacillus thuringiensis serovar entomocidus
Bacillus thuringiensis serovar entomocidus
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      putative
                                                                                                                                                                                                                                                                                                                                                                                                          AB125059.1 GI:37999233
                                                                                                                 Fax:81-011-706-2487)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAAT 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAAGTTCACTTCCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTATTCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGAAGGACCTGGAAAAGGGTATGTAACGATGATTGTAATGGAAAGCAGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCGGTACAACAGATCGATGGCGCTTCTGTATTAGTTCTATCAAACTGGAGTGCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGTTGCTTTGTATGCAAGGATATGCTAGCAATAATAACCCGCACACGGGTAATATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACGTTTTATGTAGATAGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGAAGTTCACTTCTTGTGAAGAAGATATATGACAAAGACAGTAGAGGTATTCCCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGCAATCAGGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGG
                                                                                                                                                                                                                                                                                                                         group.
                                                                                                                                                                                                                                                                                                                                                                                                                                       3752 bp DNA linear BCT 28-OCT-2003 thuringiensis serovar entomocidus cry30Aa like gene for mosquitocidal toxin and hypothetical protein gene, cds.
                              /organism="Bacillus
/mol_type="genomic I
/strain="INA288"
                                                                                                                                                                                                                                                           Yamaya,K., Ito,T., Sahara,K., nd Expression of Novel Crystal nsis subsp. entomocidus INA288
/serovar="entomocidus"
/db_xref="taxon:1436"
                                                                                            ocation/Qualifiers
                                                  DNA"
                                                                thuringiensis
                                                                                                                                                                                                                                                                            Bando, H.
Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -GATGATCTGCATTCCGGTTGT
                                                                 serovar
                                                                                                                                                                                                                                                                                                                                            Bacillus;
                                                                                                                                                                                                                                                                            . and /
                                                                   entomocidus"
                                                                                                                                                                                                                                                                            Asano,
                                                                                                                                                                                                                                                                                                                                            Bacillus
                                                                                                                                                                                                                                                                            Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3478
```

3778

3892

3838

3718

1311

3538

5 8 중 유

S 밁 5 문 δ 밁 S 멍

ঠ 🖁 ঠ

밁

중 음 중

음 성 음

S 밁 5 밁 δ 8 ð 8 ð 밁 5 밁

```
밁
                                    ક
                                                                         몽
                                                                                               중 유
                                                                                                                                                          S
                                                                                                                                                                                         유성
                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sg
                 2466
                                                                                                                                     2346
                                                                                                                                                                                                                                                              2226
                                                                                                                                                                                                                                                                                                                                                                                     2106
                                                                                                                                                                                                                                                                                                                                                                                                                                         cal Similarity 76.8%;
1245; Conservation
                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                                                                                                                                                                                                                   GTGATTCATATGTTTACAAGTGGTACGAAAAACATGTTAAAAATAGAAACGACAGACTAT
                                                                                                                                                                                                                                                                                                                                                                                                     GTGAGTĆCTATGTTTACAAGTAGTAGGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                         GAAATAGATCGAGTGGCAAATTCTATAGAGAATATGTCAGATGAACAACATTCACAAGAG
                                                                                                                                                                                                                      CTCCAAAATGGAGACTT-----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                              GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                             ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                              CCCTATACACGTTATCTGGTAAGAGGGTTTGTCGGAAGTAGTAAAGAGCTAGAATTAGTG
                                              CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                       ATTCAGTCGGATAATGCTACTTTTAAAGGGAATTATCTGAATATGTCTGGGGCACGAGAC
                                                                                                                                                                   ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                 CTCCAAAATGGTGATTTTGAGGATTTATTTAGCGGCTGGACTACAAGTAATCATATGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              '/product="putative mosquitocidal toxin"

//protein_id="BAD0052.1"

//db_xref="gi.3799234"

//translation="MNPYQKTEYEILDALPNYSNMVNAYSRYPLANNPQVPLQNTSY
/translation="MNPYQKTEYEILDALENYGSTIALIRPGGEAIGFVLGTFSTILPI
LWPNGETKIWTDFAERGLQLFRPELGQDAIEILVTGVKSGYNALKNRMENFEQAFTKW
KGNRTESNAEQVIRDFDSYRDKVIDLKNUYMINPENKPAFINLYAQTANIDLILYQRG
AVYGDDWEKDINGSISPFWGSKDYYESLKTKIEEYTNYCAFTYRNSLNILKNKPNISW
DTYNKYREATLGALDLYALFPNYDMHLYPAATKTEITRKY MPSSGLQSNYFQSLE
GLENALTHPPSLFTWLMELNLYTYRENFALQYSSLSGLQARSKYTQNPTILDNPAQ
GVRNGTSTQIGLNNLFVYKLSMSQYHHPNDCSSIAGISDMTFYKSDYNGNASATQTYQ
AGRNTNNVINTFNNGFQKASSSNNISIKGTKHILSDIKMTYFRTGGMYQVVDFGYSFA
WTHTSVUDPDNLLVPNRITQIPAVKALGISTDSKYVKGPVFIGGDLLLKLAQATIRIKT
DHANTRYKIRVRYASNANTPIVLSSLQNTLTVTFPQTITHSTISELQYKDRQYVTFPG
EFIMDKPSIDVAIRGVQNDRNDIWIDRIEFLPITQSVLDYTEEQNIEKSQKAVNDLFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="cry30Aa like"
/codon start=1
/transI_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="cry30Aa like"
1. .2052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="ORF2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      _start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 970.4; DB 1;
Pred. No. 1.9e-166;
0; Mismatches 356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                              414
                                                                                                                                                                                                                                                                                                                                                                                   2165
               2525
                                                                         2465
                                                                                                                                     2405
                                                                                                                                                                   294
                                                                                                                                                                                                 2345
                                                                                                                                                                                                                                234
                                                                                                                                                                                                                                                            2285
                                                                                                                                                                                                                                                                                                                         2225
                                                                                                                                                                                                                                                                                                                                                                                                                  60
ş
                      문
                                                  Ś
                                                                                       밁
                                                                                                             δ
                                                                                                                                          문
                                                                                                                                                                          5
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                      ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2526
                               3543
                                                          1423
                                                                                          3483
                                                                                                                                                     3423
                                                                                                                                                                                   1303
                                                                                                                                                                                                                3363
                                                                                                                                                                                                                                              1243
                                                                                                                                                                                                                                                                            3303
                                                                                                                                                                                                                                                                                                         1183
                                                                                                                                                                                                                                                                                                                                         3243
                                                                                                                                                                                                                                                                                                                                                                     1123
                                                                                                                                                                                                                                                                                                                                                                                                   3183
                                                                                                                                                                                                                                                                                                                                                                                                                                  1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2586
1483 AATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTAC 1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703
                                                                                                                                                                     CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTA 1362
                                                                                                                                                                                                                                                                                                                                       GAAGGAAAAGTAGAAGTACAGCAAATGAACGGAACGTCTGTATTAGTTCTATCGAATTGG
                                                                                                                                                                                                                                                                                                                                                             ACAGGAAATGCCGCGGTACAACAAATGGATGGATGGAGCTTTCAGTATTAGTTTCTATCAAATTGG 1183
                                                                                                                                                                                                                                                                                                                                                                                                  GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGAAAAAACGAATGGAAACAAAGCAAGCCTATGACCAAGCAAAACAGGCGGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGAAAAACGTTGGGAAACACAAGCCTATGATCCAGCAAAAACAGGCTGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAAGAGGCGAAGCATTGGCACATGTGAAGCAAAAGGAAAAGAAATGGAATCAACACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTAACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAAATGGAAACCAACACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTACCTTCTATGCCTGTCTGTAATGAAGTATATGATGGTGAACAACAATTGTATTCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGCCTAATCCTTCATGT-----GGAGATTATCGCTGTGAATCATCGTCTCAGTAT 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAATGCGTTACGGAAAAGAATAGATACCATCATGAATGTACCGAATGACATACCATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAACACGTTACGGGAAAGAATTGAATGCTATCATGAATGTTCCAAATGATTTGGCCTAT 474
                              GAAAGCATCGAATTGATTTGTATGAACGGCTATACTAGAAAAAATAACCAGAATATGAGT
                                                          GATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGT 1482
                                                                                                            TTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATA 1422
                                                                                                                                                                                                                                 AGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATGATGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATCAGTTGGTACAGTCGATTCCATATGTACACAATGAGTGGTTACCGGATGTTCCGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTATTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCTCTTCCCCAGATGGTTACGCAACATTAGATAATTTAGAAGTAATTGAAGAAGGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTTCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATATTGATACAGGTGAAGTAGATTATAAGACAAATCTAGGAATTTGGGTGTTGCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGAATGTAGGATATTATAATCCAATGCCAGTTTCTATGCCTTCTTACACATCTGATGCT 2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGAGCCAAGGGTATCCTACACCAACAGATGGATATGCTCCCGATATGT-----ATGCA 582
                                                                                          TTCACAGAAAGCGATCGTGTCCGAATTGAAATCGGGGAGACCGAAGGTTCGTTTTATATC 3542
                                                                                                                                                      CAGGAAACACTTACGTTTACATCCTGTGACGGAGGATATATGACAAAAACGGTAGAGGTA
                                                                                                                                                                                                                 AGTIGCGAAAAAAGAAGGCCTTGGAAAAGGCTATGTAACGATGATGGGTTGTAATGGAAAG
                                                                                                                                                                                                                                                                              AGTT CTGGAGTAT CTCAAAAC CTGCATGTCCAACAT CATTGTGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATTTACA----GGCGAGGCATTACATTATGATGTTACATTGTCTCAGATTAAGAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCAGTGTÄTGCCÄGGCÄAÄÄÄÄÄÄÄÄÄÄTGTGGTATGTCÄÄĞÄTTCTCÄTCAÄTTCAÄGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTT
                                                                                                                                                                                                                                                                                                                                         3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             642
                                                                                                                                                                                                                   3422
                                                                                                                                                                                                                                                                               3362
                                                                                                                                                                                                                                                                                                            1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2765
                                 3602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            822
```

```
JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
AB161456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                 Sab
                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AB161456
3931 bp DNA linear BCT 03-FEB-2004
Bacillus thuringiensis serovar entomocidus cry4Ba like and ORF2
genes for putative mosquitocidal toxin and hypothetical protein,
complete cds.
AB161456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (30-JAN-2004) Ikeya Tomonori, Graduate School of Agriculture, Hokkaldo University, Department of Appiled Bioscience; Kita-Sjyo, Nishi-Schome, Kita-ku, Sapporo, Hokkaido 0608589, Japan (E-mail:ikeyan@abs.agr.hokudai.ac.jp, Tel:81-011-706-2487(ex.2487),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ikeya,T., Yamaya,K., Ito,T., Sahara,K., Cloning and Expression of Novel Crystal thuringiensis subsp. entomocidus INA288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus thuringiensis serovar entomocidus
Bacillus thuringiensis serovar entomocidus
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (E-mail:ikeyan@abs.agr.hokudai.ac.jp,
Fax:81-011-706-2487)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tomonori, I., Kumiko, Y., Takeshi, I., Ken, S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB161456.1 GI:41688282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Нівапогі,В.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACT 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAATTATACCAACAATTATGAACAACATGCCGGTTGTACGTGTAATCAAGGTTATAAC 3722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA 3724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 3931)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        group.
                                                                                                               IYGKEWGYĪNNIĪĒGYHSDQLDMTQDYTNYĀVDTYNKGLEBAKKIKNSDKLDMDFYNQ
YRRDMTLTVLDVIĀLFPTYDVRKYPISTKVELTREITYDMINYLMPMYNDYBCQRF
AGYTVAQFNSIENALTREBHLFTMLKEVTGYSYVĀQYGQSFMTGIQNTSYKTTNYEDY
FSGPLHGVRYAGDTARSVDNNGKDVSIYSTMFPLETNNHVHELRPGTAYYFGVKGHR
HDATDRRTGNSGQKILGEDSKTGRIATGPSYFISEIFYYDKETNIRFIRFTEXFYNRL
SYIBAYATDCGRISGYBCDGCFRTFQMCAMTHYSADFYNTIHPDKITQISAVKAFYHRL
SYIBAYATDCGRISGYBCDGCFRTFQMCAMTHYSADFYNTHPDKITQISAVKAFYLR
GYGGQVVSGPGFTGGDLVKLFYNARLKIRLĶFTSTSKKYRVRVRYASMGAGTLRAEK
                                                                                                                                                                                                                                    /translation="MNSYQNKNEYEILNAPSNNTNMPNRYPFANDPNAMMKNGNYKDW
LDICKPEYRYSNPEAYKNTKAAMSFGVGLYSTILGVLGGFISVTLGAIIGVTKYNKYKYW
IPADEYDNTKETWGVLIAAIKKLIYEEIKGEAWAAKAKALGIYKYMKYKYT
IPADEYDNTKETWGVLIAAIKKLIYEEIKGEAWAAKAKALGIYKYMKANFHLLLLLRDVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Bacillus thuringiensis serovar entomocidus"
/mol_type="genomic DNA"
/strain="INA288"
                                                                                                 WSPYGSVFSNFAYEYTGDSNKFNNFKYLETLSESFNISGVEIIIQNLSSSQLIVDKLE
                                                                                                                                                                                                                                                                                                     /product="putative mosquitocidal toxin"
/protein_id="BAD08532.1"
/db_xref="G1:41688283"
/product="hypothetical protein"
               /codon_start=1
/transl_table=11
                                               /note="ORF2"
                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/transl_table=
                                                                                                                                                                                                                                                                                                                                                                                          /gene="cry4Ba like"
                                                                                                                                                                                                                                                                                                                                                                                                                          'gene="cry4Ba like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                          db_xref="taxon:1436"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             serovar="entomocidus"
                                                                                                                                                                                                                                                                                                                                                                                                              .2061
                                                                                                                                                                                                                                                                                                                                                          _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bando, H.
Protein G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shin-ichiro, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus; Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genes from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Asano,S.
Genes from Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3662
                          Ś
                                                                 맑
                                                                                                                                 밁
                                                                                                                                                                 Ś
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                             Ś
                                                                                                                                                                                                                                                                         2837
                                                                                                                                                                                                                                                                                                                                          2777
                                                                                                                                                                                                                                                                                                                                                                                                              2717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2297
                                                                   3017
                                                                                                                                                                                                       2897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                          475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                      643
                                                                                                                                                                                                                                       583
                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
```

```
/protein_id="BAD0853.1"

/db xref="G1:41688284"

/tainslation="Metsgakanmikiletidyrididendegeknmikde
/tainslation="Metsgakanmikiletidyrididendegeknmikde
/tainslation="Metsgakanmikiletidyrididendegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknmikdegeknet.

FPTY1YQKLIDESKLKPYTRYLVRGFVGSSKDLELVVRRYGKEIDTIMNVPNDIFYVPS
MPVCNELYDGEQPYSKGNVGYYNSMPVSAP8YTSDACQCMPGKKQVVCHDEBJQFKFH
IDTGSVDYNTNLGIWYLFKISSPDGYATLDNLEVIEBGFVRGEKLAYVKQKEKKWNQQ
MEKKRMETKQAYDRAKQAUDALFTGEELHYNVTLSQIKMANQLVQSIPYHNEMLPDV
PGMYYDLYQELNTRINQARYLYDARNVITNGDFTQGLQGWHAEGKVEVQVMNGTAVLV
LSNMSSGVGQNLHVQHHGGYVLRVSAKKGFPGKGYVTMMGCNGKQETLIFTSCDGGYM
TKTVEVFPESERVRIEIGETEGSFYIESIELICMNGYTSNNSQNMSNMYDQSYSGNYS
QNTSNMYNNNYEQHAGCTCNQGYNNGGCTCNQG"
```

Query Match Best Local Similarity Matches 1238; 2537 2477 3077 GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT GTAAGAGGCGAAGCATTGGCATATGTGAAACAAAAGGAAAAGAAATGGAATCAGCAAATG CATATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGATGTCTTATTAAAA ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA CTCCAAAATGGAGACTT-----TTCTGGGAATGATTGTGGACATTCGGTAATGATATTATC GAAATAGATCAAGTGGCAAATTCTATAGAGAATATGTCAGATGAACAACATTCACAAGAG CTAACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATG 822 ATTTCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCA 762 CATATTGATACAGGTGAAGTAGATTATAATACAAATCTAGGAATTTGGGTGTTGTTTAAA TGTCAGTGTATGCCAGGCAAAAAAACAGGTAGTCTGTCATGATTCTCATCAATTCAAGTTT TGCCCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTT GGGAATGTAGGATATTATAATTCAATGCCAGTTTCTGCGCCCGTCTTACACATCTGATGCT GTGAGCCAAGGGTATCCTACACCAACAGATGGATATGCTCC-----CGATATGTATGCA GTACCTTCTATGCCTGTTTGTAATGAATTATATGATGGTGAACAACAACCGTATTCAAAA ATGCAGCCTAATCCTTCATGT-----GGAGATTATCGCTGTGAATCATCGTCTCAGTAT 528 GTAATGCGTTATGGAAAAGAATAGATACCATCATGAATGTACCGAATGATATCCCGTAT GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT CCGTATACACGTTATCTGGTAAGAGGTTTTGTCGGAAGTAGTAAAGATTTAGAATTAGTG CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG ATATACGGAACGATATTTCCAACATATATTTACCAAAAAATTGATGAATCCAAATTAAAA ATTCAGGCAGATAATTCTACTTTTAAAGGGAATTATCTGAATATGTCTGGGGCGCGAGAC ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC CTTCAAAATGGTGATTTTGAGGATTTATTTAGCGGCTGGACTACAAGTAATCATATGTCC GTGGATTCTATGTTTACAAGTGGTGCGAAAAACATGTTGAAACTAGAAACGACAGATTAT ATTTCTTCCCCAGATGGTTACGCGACATTAGATATTTAGAAGTAATTGAAGAAGGACCC Conservative 55.8%; 76.1%; <u>.</u> Score 941.4; DB 1; Pred. No. 3.5e-161; Indels Length 33; Gaps 702 2896 582 474 354 180 3076 2836 2476 2416 2356 3016 642 414 294 234 60 2956 2776 2716 2656 2536 2596 u

```
RESULT 8
BTJEG65
LOCUS
L
                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                              AUTHORS
TITLE
                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                        3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    823
                                                                                                                                                                                                                                                                 BTJEG65
B.thurin
Y07603
Rosso,M.L. and Delecluse,A.

Contribution of the 65-kilodalton protein encoded by the cloned gene cry19A to the mosquitocidal activity of Bacillus thuringiensis
                                                                                                                             cry19Aa gene; mosquitocidal toxin;
Bacillus thuringiensis
Bacillus thuringiensis
Bacteria; Firmicutes; Bacillales; F
                                                                                                          cereus group.
                                                                                                                                                                                                                                  Y07603.1 GI:2624004
                                                                                                                                                                                                                                                                                         thuringiensis cry19Aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACAATG 1609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATA 1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTA 1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGCCAAAAAAGGACGTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGGAAAAGTAGAAGTACAGCAAATGAACGGAACGGCTGTATTAGTTCTATCGAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATTTACAAATGAACAAGAGTTACACTATCATATTTAGTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAAAAAGCGCATGGAAACAAAGCAAGCCTATGACCGAGCAAAAACAGGCGGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAAAAAACGTTGGGAAACACCAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGGTG 3908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATATGTATGATCAAAGTTATAGTGGCAATTATAGCCAGAATACTAGCAATAT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAMAGCATCGAATTGATTTGTATGAACGGATATACTAGCAATAATAGCCAGAATATGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGT 1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCCCAGAAAGCGAGCGTGTACGAATTGAAATTGGGGAGACCGAAGGTTCGTTTTATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGGAAACACTTACGTTTACGTCCTGTGACGGAGGATATATGACAAAAACAGTAGAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTGCGAAAAAAGAAGGGCCTGGAAAAGGGTATGTAACGATGATGGGTTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTTCTGGAGTATCTCAAAATCTACATGTCCAACATCATTGTGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGGAAATGCCGCGGTACAAAATGGATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGCACGAAATGTGATAACAAATGGTGATTTCACCCAAGGATTACAAGGATGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAACTATGATTATATCAAGAGTTAAACACACGTATCATGCAAGCACGTTATTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATCAGTTGGTGCAGTCGATTCCATATGTACACAATGAGTGGTTACCGGATGTTCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATTTACA----GGGGAAGAGCTACATTATAATGTTACATTGTCTCAGATTAAGAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----GTATAATAACAATTATGAACAACATGCGGGTTGTACGTGTAATCAAGGTTATAAC
                                                                                                                                   Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                            4391 bp
gene & (
                                                                                                                                                                                                                                                                                               ORF2
                                                                                                                                                                                                               ORF2
                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                   Bacillus;
                                                                                                                                                                                                                                                                                                                       BCT
                                                                                                                                                                                                                                                                                                                       18-APR-2005
                                                                                                                                   Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
FEATURES
                                                                                  ORIGIN
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SgS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             revised
```

```
subsp. jegathes, Appl. Environ. I 9361431 2 (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
Submitted (20-AUG-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteries Entomopathogenes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Delecluse, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 4391)
                                                           /db_xref="InterPro:IPR001178"
/db_xref="InterPro:IPR005638"
/db_xref="InterPro:IPR005638"
/db_xref="InterPro:IPR005638"
/db_xref="InterPro:IPR005639"
/db_xref="InterPro:IPR008979"
/db_xref="InterPro:IPR008979"
/db_xref="InterPro:IPR008979"
/db_xref="InterPro:IPR008979"
/db_xref="InterPro:IPR008979"
/translation="MHYYGNRNEYDILMASSNDSNMSNTYPRYPLANPQQLMQNTNY
/translation="MHYYGNRDEGGIVSTIVEFROGSIILDTIGLEYQISELLW
PEDDTQQYTWQDIMMHVEDLIDKRITEVIRGNAIRTLADLQKVDDYNNMLKKWKDDP
KSTGNLSTLYTKFTALDSDFNQAIRTVNNQGSPGYELLLLPVXAQIANLHLLLLRDAQ
IYGDKWWSARANARDNYYQIQLEKTKEYTEYITWINGHIYGLMFYBYSFEKAESLY
TRAPHLFTWLKGFFFVINSISYWTFLSGGQNKYSYTNNSSINEGSFRGQDTDYGGTSS
TINIESSSYVNNLWTENYEYIYWGDDFNNITKMFFVTNNSSKELIYGAHRTNKEFV
RTDPDFLTNEGGTELAKYNDYMHILSYMLINGETFGQKHGYSFRTHSSVDRNTIA
ANKITQIPVVKASSINGSISIEKGPGFTGGDLVKMRADSGLTMRFKAELLDKKYRVRI
RYKCNYSSKLILRKWKGEGYIQQOIHNISPTYGAFSYLESFTITTTENIFDLIEMETYTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  jegathesan
Environ. Microbiol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     by submitter 16-SEP-1997
4359. .4377
/rpt_type=INVERTED
                                            NTSDMYDQGGSVAKFEKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    PYGRQFVEDI PSLILDKI EFLPTN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="mosquitocidal toxin"
/protein_id="CAA68875.1"
/db_xref="GI:2624005"
                                                                                                                                                                                                                                                                                                                                                                                                             note="ORF2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1/transl_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="cry19Aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="cry19Aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene="cry19Aa"
707. .713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   db_xref="GOA:032307"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone="JEG65-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'isolate="367"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Bacillus thuringiensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sub_species="jegathesan"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  xref="taxon:1428"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . Delecluse,
s, 25 rue du
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63 (11),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4449-4455 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Institut Pasteur, Unite des
Dr. Roux, 75724 Paris Cedex
```

54.3**%**; 76.0**%**;

Score 914.8; DB 1; Pred. No. 2.3e-156;

Length 4391;

```
Ş
                                                                                                                                                                        밁
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ち 음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                    S
                                                        밁
                                                                             ঠ
                                                                                                       В
                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                       日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1187;
                                                                                                                                                                        3639
                                                                                                                                                                                                                                3579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3159
                                                                                                                                                                                                                                                                                       3519
                                                                                                                                                                                                                                                                                                                                                3459
                                                                                                                                                                                                                                                                                                                                                                                                         3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2799
  3816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2859
                                                                                                                 3699
                                                                                                                                            988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    355
                                                                                                                                                                                                                                                           766
                                                                                                                                                                                                                                                                                                                   706
                                                                                                                                                                                                                                                                                                                                                                         646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Н
                                                                                                                                      TTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGAT
                                                                                                                                                                        AAAAAGCGCATGGAAACAAAGCGAGTCTATGACCGAGCAAAAACAGGCGGTAGATGCATTA
                                                                                                                                                                                          AAAAAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTA
                                                                                                                                                                                                                             ACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                         CCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATTTGATTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTACCTTCTATGCCGGTCTGTAACGAATTATATGATGGTCAACAACCGTATCCAAATAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCAGCCTAATCCTTCATGT---GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAACACGTTACGGGAAAGAAATTGATGATGATTCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGTATACGCGTTATCTAGTCAGGGGATTTGTGGGAAGTAGTAAAGATCTAGAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATATATGGAACGATATTCCCCAACGTATATATACCAAAAATTGATGAATCCAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAATAGATCAAATGGCGAATGCTATAGAAAATATGTCAGGTGAACAATATTCACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAATTTTATGCTTACAAGTGGTGCGAAAAATATGTTAAAACTCGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAAATAGAAACGACAGATTAT
                   AACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGAT
                                                                            CGACTGGTACAGTCGATTCCCTATGTATACCCATAATTGGTTACCGAATGCTCCAGGTATG
                                                                                                                                                                                                                                                                                       TCTTCACCCGATGGCTACGCGACATTAGATAATTTAGAAGTAATTGAAGAGGGACCAGTA
                                                                                                                                                                                                                                                                                                                   TCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGTAGGATATTATAATCCAATGCCAGTTTCTCAGCCTTCTTACACATCCGATACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCCAAGGGTATCCTACACCAACAGATGGAT----ATGCTCCCGATATGTATGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTCAGGCAGATAATGCAACTTTTAAAGGGAACTATCTGCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCAAAATGGAGACTT----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAATGATGCAATGGCATGACATAAAATATGCCAAACAATTGAGTCAAGCACGTAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTATGATATATACCAAGAGTTAAAACGCGCGTATCATGCAAGCACGCTATTTATACGAT
                                                                                                                   TTTACA---
                                                                                                                                                                                                                                                                                                                                                                            ATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                          <u>CAGTGTÁCGCCCGGCÁAÁÁAACATGTGGTATGTCÁTGÁTTCTCÁTCAATTCAAGTTTCÁT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                 GGAGAAGAGTTAAACTATGATGTTACATTGTCACACATTAAGAACGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                            1065
                                                                                                                3755
                                                                                                                                                                        3698
                                                                                                                                                                                                     885
                                                                                                                                                                                                                                                                                       3578
                                                                                                                                                                                                                                                                                                                                                                                                                                   645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2978
                                                                                                                                                                                                                                3638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2858
                                                        3815
                                                                                                                                            945
                                                                                                                                                                                                                                                           825
                                                                                                                                                                                                                                                                                                                   765
                                                                                                                                                                                                                                                                                                                                                3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                  JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 9
AB185105
                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rocus
                                           gene
                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1066
                                                                                                                                          Submitted (16-JUL-2004) Akira Ohgushi, Kyushi University, Graduate School of Agriculture, 6-10-1, Hakozaki, Higashi-ku, Fukuoka, Fukuoka 812-8581, Japan (B-mail:ohgushi@brs.kyushu-u.ac.jp, Tel:81-92-642-3028, Fax:81-92-642-3028)

Location/Qualifiers
                                                                                                                                                                                                                 2 (bases 1 to 3668)
Ohgushi, A., Saitoh, H., Wasano, N. and Ohba, M.
Direct Submission
                                                                                                                                                                                                                                                     ongushi,A., Saitoh,H., Wasano,N. and Ohba,M. Cloning and characterization of novel cry genes mosquitocidal Bacillus thuringiensis serovar sot Unpublished
                                                                                                                                                                                                                                                                                                                                             Bacillus thuringiensis
Bacillus thuringiensis
Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                       AB185105
AB185105.
                                                                                                                                                                                                                                                                                                                                                                                                                                AB185105

3668 bp DNA linear
Bacillus thuringiensis cry24-like, orf2s1 genes for
delta-endotoxin, hypothetical protein, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GG 4357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -
유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCAAAAAAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAATGCCGCGGTACAAATATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCACGAAATGTCATAACAAATGGGGATTTTGCACAAGGATTACAAGGGTGGCATGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAACACTTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGAAAAAAGAAGGGTCTGGGAAAGGCTATGTAACGAGGATGAGTTGTAATGGTAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTGGAGTATCTCAAAACCTTCATGTCCAACATCCACATGGATATCTGTTACGTGTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAAGTAGAAGTACAGCAAATGAACGGAACGTCTGTATTAGTCTTATCCAATTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCATCGAATTGATTTGTATGAACGGATATACTAGCAATAATAACCAGAATATGAGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGAAAGTGATCGTGTACGAATTGAAATTGGGGAGACCGAAGGTTCGTTTTATATTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1547
                                                                                                                                                                                                                                                                                                                                 group
              /gene="cry24-like"
1. .2028
                                                                                  /organism="Bacillus thuringiensis"
/mol_type="genomic DNA"
/strain="96-OK-85-24"
gene="cry24-like"
                                                  /db_xref="taxon:1428"
                                                                       'serovar="sotto"
                                                                                                                                1. .3668
                                                                                                                                                                                                                                                                                                                                                                                                       GI:50539654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTACGTCCTGTGACGGAGGATATATGACAAAAACGGTAGAGGTATTC
                                                                                                                                                                                                                                                                                                                                                Bacillales;
                                                                                                                                                                                                                                                                                                                                                Bacillaceae;
                                                                                                                                                                                                                                                                           sotto
                                                                                                                                                                                                                                                                                                                                                 Bacillus;
                                                                                                                                                                                                                                                                         from a
tto strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВСТ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-JUL-2004
                                                                                                                                                                                                                                                                                                                                                 Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3995
```

ð

```
S
                                                              밁
                                                                                                   S
                                                                                                                                   유 &
                                                                                                                                                                                                           음 성 음 성
                                                                                                                                                                                                                                                                                                                                                                  음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 1187; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SdC
                                                                      2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2046
                                                                                                                                                                                                                                                                                                                                       181
                                 415
                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                          CCATATACACGTTATCGAGTAAGAGGGTTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                   GAAATAGATAAAATGGCAAACTATGTAAAAAATATGTCAGATGAACAATATTCACAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAATCCTATGTTTACAAGTGGTGGGAAAAACATGTTGAAACTAGAAACGACAGATTAT
GTAATGCATTATGGAAAAGAAATTGATACAGTGATGAATGTACCTAATGATATTCCCTAT
                               GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                              ATATATGGAACGATATTCCCCAACGTATATATACCAAAAAATTGATGAATCCAAATTAAAA
                                                                                                                                                                    ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                  ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTT-----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                            AMAATGATGCAATGGAATGACATAAAATATGCCAAACAATTGAGTCAAGCACGTAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/product="delta-endotoxin"
/protein_id="BAD32657.1"
/protein_id="BAD32657.1"
/db_xref="gI:5053655"
/translation="myneyqnkkesvyfehsnnqkblernypprunkkeskylgisevitknvvs
/translation="myneyqnkkesvyfehsnnqkblernykbkslitkgslysevitknvys
wvnecegsnyspspaaavtsalisivlktlakalvsslvdaiksslitknvvs
/olsmelvnqlinrrigeTimblosaslakgisixtixxiaaleampkoksnitlgenvi
EEFKYVESRFFENLKGIYRTSSSQITLLPTFAQAANLHLSMLRDAVMYQEGMNLQSHL
DYKMELDIALKDYTNYCVEVYNRGLNALAGSTALDMLERSFRRDMTLMVLDLVAlfP
NYDPVQYPLPTKIGLSRKIYTDPVGTTRDTDFGNWTLTDRTLANFNDLERDVTDSPSL
VKWLVDMNIYTGAIDSYBISGPGGERIGYWYGNNNSFVLTGSRELSYNMYGEIAHEDP
ITIFPGESLECNVNDYSTISGPGGTFTRDTDFGNWTLTUDRYCSKQPYPSYPI
TITFPGEESLECNVNDYATIRNALDSTFGVSSSHFFNVMGKNELYQSKQPYPSYPI
TAADKITHIPAVKGSNLSASSAVIKGPGFTSGDLLRLGPNQFVDYLITTRLSFTFGQG
GYNMSIYNFTSNRNVIIDKIEFIPVSGTPFEYEKHKLKYENFAYITTRLSFTFGQG
GYNMSIYNFTSNRNVIIDKIEFIPVSGTPFEYEKHKLKNTQADVNNLFLN"
2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="orf2s1"
/codon_start=1
/transT_table=11
/product="hypothetical protein"
/protein_id="BAD32658.1"
/db_xref="GI:50539656"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="mftsggknmiklettidybildkmanyvknmsdeqysqekmmqmnd ikyakolsqaraliykdilgksgardlyggil
ikyakolsqarnliqkodfedlfsgyttsnqmsiqaanatfkonylhmsgardiygti fftyt yokidesklkpytrylvkgfyvgskolelvymnygkeidtvmanydhdipyps mpvknelydegoqpyemkolshopkeh idtgevdynninggimvlfkisspdgyatldnleviegpvrgealthvkokekkmnqq mekkrmetkoaydrakoavdalftgeelnynvtlshiknaddlvgsipynhubelrdv pgmnydtydlygliaridhekkningurakolokogsipynhakoavdalftgeelnynvtlshiknaddlvgsipynhubelrdv pgmnydtydlygliaridhekkrntopkemketkoaydrakolokoakekkendolokogsignuhavdhohydliaridhekkendolokogsisonlhvohohydliknsakokegsokgyvtlmgcydkokettufytscocgyitkrvskokesdegsokgyvtlmononmsnmydogyinnyn qnytntyeqhavctcnqnynnggctckog"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="orf281"
2055. .3668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 3668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 891.4; DB 1;
Pred. No. 4.3e-152;
0; Mismatches 391;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                 474
                                                                      2465
                                                                                                                                              2405
                                                                                                                                                                                                                         2345
                                                                                                                                                                                                                                                              294
                                                                                                                                                                                                                                                                                                 2285
                                                                                                                                                                                                                                                                                                                                                                            2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                         δ
                                                                                                             Ş
                                                                                                                                                    밁
                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                           음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  & 함
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            र्
                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                 3543
                                                                                                                                                                  3423
                                                                                                                                                                                                                                                                                                                   3303
                                                                                                                                                                                                                                                                                                                                                        1243
                                                                                                                                                                                                                                                                                                                                                                                             3243
                                                                                                                                                                                                                                                                                                                                                                                                                                 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTACCTTCTATGCCGGTCTGTAACGAATTATATGATGGTGAACAACAACCGTATCCAAAT
                                       AATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTAC 1542
                                                                                                           GATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGT
                                                                                                                                                                                    TTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATA 1422
                                                                                                                                                                                                                                                                  CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTA
                                                                                                                                                                                                                                                                                                                                       ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAĀĠĠĀĀĀĀĠTĀĠĀĀĠTĀĊĀĠĊĀĀTTĠĀĀTĠĠĀĀĊĠĀĊTĠTĀTTĀĠTCTTĀTCĊĀĀTTĠĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAGGAAATGCCGCGGTACAAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCGACTGGTACAGTCGATTCCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAAAAAACGAATGGAAACAAAGCAAGCCTATGACCGAGCAAAAACAGGCGGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAAAAAACGTTGGGAAACAACAACAAGCCTATGATCCAGCAAAAACAGGCTGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACCAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTCTTCCCCAGATGGTTACGCAACATTAGATAATTTAGAAGTAATTGAAGAGGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGCCTAATCCTTCATGT-----GGAGATTATCGCTGTGAATCATCGTCTCAGTAT
                 AATATGTATGATCAAGGATATATTAACAACTATAATCAAAATTATACGAACACTTATGAA
                                                                                                                                                                  TTCCCAGAAAGCGATCGTGTACGAATTGAAATTGGGGAGACCGAAGGTTCGTTTTATATT
                                                                                                                                                                                                                                           AAGGAAACACTTACGTTTACGTCCTGTGACGGTGGATATATAACAAAAACAGTAGAGGTA
                                                                                                                                                                                                                                                                                                                   AGTGCGAAAAAAGAGGGTCTGGAAAAGGCTATGTAACGTTGATGGGGTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGCACGAAATGTCATAACAAATGGTAATTTCGCACAAGGATTACAAGGGTGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGATTTGGTACAATCGATCCCATATGTACACAATGAGTGGCTACGGGATGTTCCAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTATTTACA---GGAGAAGAGTTAAACTATAATGTTACATTGTCTCACATTAAGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTNAGAGGCGAAGCATTGACACATGTGAAAACAAAAGGAAAAGAAATGGAATCAGCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGGTCATTGAAGAAGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACATTGATACAGGGGAAGTAGATTACAATACAAATCTAGGAATTTGGGTGTTGTTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCCCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAATGTAGGATATTATAATCCAATGCCAGTTTCTACGTCTTCTTACACATCTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGAGCCAAGGGT-----ATCCTACACCAACAGATGGATATGCTCCCGATATGTATGCA
                                                                                        GAAAGCATCGAATTGATTTGTATGAACGGATATACTAGCAATAATAACCAGAATATGAGT
                                                                                                                                                                                                                                                                                                                                                                                           AGCTCTGGGATATCTCAAAACCTTCATGTCCAACATCAACATGGATATCTGTTACGTGTG
                                                                                                                                                                                                                                             3422
                                                                                                                                                                                                                                                                                                                     3362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 942
                                                                                                                                                                  3482
                                                                                                                                                                                                                                                                                                                                                        1302
                                                                                                                                                                                                                                                                                                                                                                                               3302
                                                                                                                                                                                                                                                                                                                                                                                                                                   1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2585
                                                                                            3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2645
```

```
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
AB193814
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complete
AB193814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (26-OCT-2004) Akira Ohgushi, Kyushu University, Graduate School of Agriculture; 6-10-1, Hakozaki, Higashi-ku, Fukuoka, Subauka, 192-8581, Japan (E-mail:ohgushi@brs.kyushu-u.ac.jp, Tel:81-92-642-3028, Fax:81-92-642-3028)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Obgushi,A., Wasano,N., Saitoh,H. and Obba,M. Identification and characterization of novel cry mosquito-specific Bacillus thuringiensis serovar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ohgushi, A., Wasano, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus thuringiensis
Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AB193814.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AB193814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACATGCCGTTTGTACGTGTAATCAAAATTATAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGGGTATACAAACAACTATAACCAAGACTCTAGTAAT 1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 3642)
      /procein_id="BAD67157.1"
//brocein_id="BAD67157.1"
//db_xref="G1:54495305"
//brocein_id="MNLYGNKNDSEILNASSNNSNMSTTYPKYPLAHSRQDSMENNYY
/ translation="MNLYGNKNDSEILNASSNNSNMSTTYPKYPLAHSRQDSMENNYY
/ keminocetintectpiddinsvaatigavgailaliegegegaigevistetpungebetdh
keminocetintectpiddinsvaatigavgailindvogseynslktemoneedsetdh
kexproratvavntndessvrdolirlkorflindenkparlilyaotanepliliyorg
alvademendinrsispllgskdyyislaakikeytnycketyrnslnilknktnisw
gtynkyrrevtigaldlaalephydiciypigteltrkvymssecloosnyfosie
gtenalthepsletminelnlytirenenpallvsslsgloaisrytonenrisnea
gtenalthepsletminelnlytirenenpallvsslsgloaisrytonenrisnea
gtenalthepsletminelnlytirenenpallvsslsgloaisrytonenpersea
agnusuneinterpholossssnnisikotningtyskofgyteybetgysea
withtsvnedniivenritgipavkadyltspakviagegthegdlvallnaatoagem
QIOCKTGSFTGASRRYGIRIRVAANNALTVSLGYTVQGGMTGTTFITERTELRENNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     group.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cds.
                                                                                                                                                                                                                                                                                2182.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       thuringiensis
                                                                                                                                                                                                                                                                                                              I PTDLKYEEFKYKEYNQI I TMTAPQNTI VT I AI QQLNAFPNDQLI I DRI EFY PMDQGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Bacillus thuringiensis"
/mol_trype="genomic DNA"
/strain="96-OK-85-24"
/serovar="sotto"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transl_table=11
/product="Cry30-like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /transī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="taxon:1428"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:54695304
                                                                                                                                                                                                                                                                               .3642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillales; Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Saitoh, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA ]
Cry30-like,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and Ohba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear BCT 28-OCT-2004 hypothetical protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genes
sotto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from an
                         Ş
                                                                                      δ
                                                                                                                            밁
                                                                                                                                                         Ś
                                                                                                                                                                                               밁
                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 1107; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2173
3130
                                                              3073
                                                                                                                               3013
                                                                                                                                                                                               2953
                                                                                                                                                                                                                                                                 2893
                                                                                                                                                                                                                                                                                                                               2833
                                                                                                                                                                                                                                                                                                                                                                                                 2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2233
                                                                                                                                                                                                                                                                                                                                                                                                                                  583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                763
                                                                                                                                                                                                                                                                                              703
                                                                                                                                                                                                                                                                                                                                                                643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
GATGATTTGGTACAATCGATCCCATATGTACACAATGAGTGGCTACGGGATGTTCCAGGC
                                                                                                                              GAGAAAAAACGAATGGAAACAAAGCAAGCCTATGACCGAGCAAAACAGGCGGTAGATGCA
                                                                                                                                                      GAGAAAAAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                    CATATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATAGATAAAATGGCAAACTATGTAAAAAATATGTCAGATGAACAATATTCACAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAATCCTATGTTTACAAGTGGTGGGAAAAACATGTTGAAACTAGAAACGACAGATTAT
                        GATCGACTGGTACAGTCGATTCCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                    TTATTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                 GTAAGAGGCGAAGCATTGACACATGTGAAAACAAAAGGAAAAGAAATGGAATCAGCAAATG
                                                                                                                                                                                                                                CTAACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATG
                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAATGTAGGATATTATAÁTCCAÁTGCCÁGTTTCTACGTCTTCTTACACATCTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAGCCAAGGGT-----ATCCTACACCAACAGATGGATATGCTCCCGATATGTATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTACCTTCTATGCCGGTCTGTAACGAATTATATGATGGTGAACAACAACCACCGTATCCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTAATGCATTATGGAAAAGAAATTGATACAGTGATGAATGTACCTAATGATATTCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGTATACGCGTTÄTCTÄGTCAGGGGATTTGTGGGAÄGTÄGCÄÄÄGÄTCTAGAÄTTÄGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATATGGAACGATATTCCCCAACGTATATATACCAAAAATTGATGAATCCAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTT-----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAATGATGCAATGGAATGACATAAAATATGCCAAACAATTGAGTCAAGCACGTAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTCTTCCCCAGATGGTTACGCAACATTAGATAATTTAGAAGTAATTGAAGAGGGTCCA
                                                                                                                                                                                                                                                                                                ATTTCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCA
                                                                                                                                                                                                                                                                                                                                 CACATTGATACAGGGGAAGTAGATTACAATACAAATCTAGGAATTTGGGTGTTGTTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                 TGTCAGTGTATGCCAGGCAAAAAAACATGTGGTATGTCATGATTCTCATCAATTCAAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAGCCTAATCCTTCATGT-----GGAGATTATCGCTGTGAATCATCGTCTCAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTCAGGCAGATAATGCAACTTTTAAAGGGAATTATCTGCATATGTCTGGGGCTAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        49.8%;
75.2%;
                                                                 GGAGAAGAGTTAAACTATAATGTTACATTGTCTCACATTAAGAACGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 839.6; DB 1;
Pred. No. 1.1e-142;
0; Mismatches 344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3642;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       528
                                                                 3129
                                                                                                                               3072
                                                                                                                                                                  882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
3189
                                                                                                942
                                                                                                                                                                                                 3012
                                                                                                                                                                                                                                  822
                                                                                                                                                                                                                                                                   2952
                                                                                                                                                                                                                                                                                                                                   2892
                                                                                                                                                                                                                                                                                                                                                                                                    2832
                                                                                                                                                                                                                                                                                                                                                                                                                                   642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2232
                                                                                                                                                                                                                                                                                                  762
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BTPBTOXIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                           FEATURES
                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                       JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                   JOURNAL
                                 gene
                                                   RBS
                                                                                                                                          Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1003
                                                                                                                                                                          (URL,
                                                                                                                                                                                                                                            Submitted (19-APR-2002) Submitted on behalf of the pBtoxis sequencing team, Sanger Centre, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA E-mail: parkhill@sanger.ac.uk
                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 127923)
Berry, C., O'Neil, S., Ben-Dov, E., Jones, A.F., Murphy, L., Quail, M. Holden, M.T., Harris, D., Zaritsky, A. and Parkhill, J. Complete sequence and organization of pBtoxis, the toxin-coding plasmid of Bacillus thuringiensis subsp. israelensis plasmid of Bacillus thuringiensis subsp. israelensis plasmid of Bacillus thuringiensis subsp. israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus thuringiensis serovar israelensis
Bacillus thuringiensis serovar israelensis
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                                                                                                            Details of pBtoxis sequencing at the Sanger Centre are available the World Wide Web.
                                                                                                                                                                                                                                                                                                                  2 (bases 1 to 127923)
Parkhill, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus thuringiensis subsp. AL731825
                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cereus group.
                                                                                                                                                                                                                                                                                                                                                         2324359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATAGCATCGAGTTGCTTTGTATGCAAGGATA 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAGCATCGAATTACTTTGCGCGAAAGGATA 3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCCAGAAAGCGATCGTACGAATTGAAATTGGGGAGACCGAAGGTTCATTTTATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATA 1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGAAACACTTACGTTTACGTCCTGTGACGGTGGATATATAACAAAAAACAGTAGAGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTA 1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTGCGAAAAAAGAGGGGTCTGGAAAAGGCTATGTAACGTTGATGGGGTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCGCGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGAAATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGCACGAAATGTCATAACAAATGGTAATTTCGCACAAGGATTACAAGGGTGGCATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTCTGGGATATCTCAAAACCTTCATGTCCAACATCAACATGGATATCTGTTACGTGTG
                                                                                                                                                                        http://www.sanger.ac.uk/Projects/B_thuringiensis/).
                                   1163
/gene="pBt001"
1163. .2089
                                                                    note="plasmid"
                                                                                   mol_type="genomic DNA"
db_xref="taxon:1430"
                                                                                                                      organism="Bacillus thuringiensis
                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:21685410
                                   2089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       127923 bp DNA --
Rubsp. israelensis plasmid
                                                                  pBtoxis"
                                                                                                                        serovar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pBtoxis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BCT 16-APR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                            Quail, M.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3309
                                                                                                                                                                                                             9
```

```
repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/transl_table=11
/transl_table=11
/produce='ninestion element IS240 protein"
/protein_id="CAD30065.1"
/protein_id="CAD30065.1"
/db_xref="GI:21.685412"
/db_xref="GOA:Q8KNX4"
/db_xref="Interpro:IPR001584"
/db_xref="UniProt/TrEMBL:Q8KNX4"
/db_xref="UniProt/TrEMBL:Q8KNX4"
/translation="MEKENIFKWHYQADMILWTVRWYLRYNLSFRDLVEWMEERGLS
LSHTTIMRWHQYGDELMERIRKHLKGTUNGWRVDETYIKIKGERMYLYRAVDSEGNT
LDFYLSKKRDAKAAKCFLKKALASFHVTKPRVITVDGNKAYPVAIRELKNEKSIPYGM
PLRVKKYLNMNIEDDHRFIKKRILNMLGLKSMQTAVKMIAGIEAMHMVKKGQLKLRAQ
PLRVKKYLNMNIEDDHRFIKKRILNMLGLKSMQTAVKMIAGIEAMHMVKKGQLKLRAQ
PLRVKKYLNMNIEDDHRFIKKRILNMLGLKSMQTAVKMIAGIEAMHMVKKGQLKLRAQ
/product="insertion element IS240 protein"
/protein_id="CAD30066.1"
/db_xref="GO1:21685413"
/db_xref="GO1:21685413"
/db_xref="HiterPro:IFD01584"
/db_xref="UniProt-YTEMBL:08KH55"
/td=nellation="MEKENIFKWKHYQADMILWTVRWYLRYNLSFRDLVEMMEERGLS
/translation="MEKENIFKWKHYQADMILWTVRWYLRYNLSFRDLVEMMEERGLS
/translation="MEKENIFKWKHYRATUDSWRVDETYIKIKGENMYLYRAVDSEGNT
LBFTLSKKRDAKAAKCFLKKALASFHVTKPRVITVDGNKAYPVAIRELKNEKSIFYGM
PLRVKKYLNNNIEQDHRFIKKRIRNMLGLKSWQTAVKWIAGIEAMHWVKKGQLKLRAQ
SAQNQNRCIHQLFGLTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="pBt004"
/note="Similar to Bacillus thuringiensis insertion element Insertion aprotein TR:Q45766 (EMBL:M23740) (235 aa) fasta scores: E(): 3.5e-91, 99.14% id in 235 aa, and to Mycobacterium fortuitum, transposase tnpA or tnp6100 TR:Q49185 (EMBL:X53635) (254 aa) fasta scores: E():
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="pBt003"
/note="Similar to Bacillus thuringiensis insertion element IS240-a protein TR:Q45766 (EMBL.M23740) (335 aa) fasta scores: E(): 2.2e-92, 99.57% id in 235 aa, and to Mycobacterium fortuitum, transposase tnp tnp6100 TR:Q49185 (EMBL:X53635) (254 aa) fasta scores: E(): 1.4e-37, 48.05% id in 231 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="Similar in part to TR:Q9X319 (EMBL:AF065404) 8.9e-44, 78.48% id in 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="pBt004"
3612. .4319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /rpt_type=INVERTED 3521. .4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SAQNQNRCIHQLFGLTA"
2538. .2933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="
2337. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complement (2246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="UniProt/Trembl:QBKNX5"
/tramblation="MSTHLNFSQQNFKVDFTVEFDGLFNIIKLENERKELPSSALATY
/tramblation="MSTHLNFSQQNFKVDFTVEFDGLFNIIKLENERKELPSSALATY
IMLHFECNDIGMLPREGIMDLAKKSGIPYTIITTGFQVCLERKLVREIPVGNRTVYE
IVDYALYNHTAASTTDMINISLSYFRIPFYLIQTTILSSLVKARDNRGIMILLELINT
FSRKIGMEHYKHKIEDFEITRKMAFLKEKLNRNAKKVRQYIBIVKPIKFNAVDLKDKK
SSESRITRVRRQVQQVIIEKFNVIFSSNCVIENDKKELHRPIAKCRKEAVSRLKHMGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complement (3521.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3090. .3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALRKKDKENIMTAFRQEIVDIEIYLPTKQKQN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /transl_table=11
/protein_id="CAD30064.1"
/db_xref="GI:21685411"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="IS240"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="pBt003"
/note="HMMPfam hit to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=
                                                                                                                                                                                                                                                                                                                                                                                                                          .1e-37, 48.05% id in 231 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _type=INVERTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _type=INVERTED
                                                                                                                                                                                                                                                                                                                                                              _start=1
l_table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'pBt003"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF00665,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aa "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus anthracis pxo1-49 (227 aa) fasta scores: E()
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Integrase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain"
```

CDS

Sg

```
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                          SgS
                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /transl tak'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TR:Q9X2Y9 (EMBL:AF065404) (315 aa) fasta scores: E(): 4.2e-56, 84.15% id in 183 aa, and to Bacillus halodurans Bh2364 protein TR:Q9KAC5 (EMBL:AF0001515) (378 aa) fasta scores: E(): 1.6e-18, 35.45% id in 189 aa, and weakly to Lactobacillus delbrueckii integrase/recombinase orf2 TR:Q48538 (EMBL:Z50864) (333 aa) fasta scores: E(): 6.3, 28.88% id in 90 aa, and to Bacillus thuringiensis resolvase tnpI SW:TNRI BACTU (P10020) (284 aa) fasta scores: E(): 8.5, 23.88% id in 180 aa"
/codon_start=1
/transl_table=11
/product="conserved hypothetical protein"
/protein_id="CAD30069.1"
/protein_id="CAD30069.1"
/db_xref="G1:2165416"
/db_xref="UniProte/TrEMBL:QBKNX1"
/translation="MGKSFIIQNQRSLNGKTINAVVVTLKSWQKFVAAFEEKYYSYKD
TYLEDIIQHMTYEERIADVEGFVEKAKPSFSRRAMSTLAEKTGRKHKLYGITNADLEV
                                                                                                                                                                  /note="Similar to Bacillus anthracis pxo1-16 TR:Q9X2Y7 (EMBL:AF065404) (569 aa) fasta scores: E(): 0, 96.13% id in 569 aa, and to Bacillus thuringiensis pxo1 orf16-like protein TR:CAC50562 (EMBL:AJ396638) (310 aa) fasta scores: E(): 6.5e-122, 99.67% id in 310 aa"
                                                                                                                                                                                                                                                                                                                                                                  /note="1 probable transmembrane helix predicted for pBt006 by TMHMM2.0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="GOA:Q8KNX3"
/db_xref="InterPro:IPRO04107"
/db_xref="UniProc'TrEMBL:Q8KNX3"
/db_xref="UniProc'TrEMBL:Q8KNX3"
/translation="MSKNINLEETLAAPSAYLLEKGRKQSTIKRYAYDIKDFYKWLRA
/translation="MSKNINLEETLAAPSAYLLEKGRKQKTKRLWYLKKLHMFLCIVSFLDG
/KKLLHIKSWSELSEADYGTYFSELEDKRKYSQKTKRLWYLKKLHMFLCIVSFLDG
INLSLIPOGSLUNDUBFITSMEEKLKGTYLSTKGLTERQAKYRFLIMDMVCIINLVV
NYGLSLQELVSLUNDSHINFARNIWCYVKKIDTLNRDILFVKQLEIVAFHRTSF"
                                                                                                                                                                                                                                                                 complement (6451. .8160)
/gene="pBt007"
                                                                                                                                                                                                                                                                                                                             complement (5515. .5519)
complement (6451. .8160)
                                                                                                                                                                                                                                                                                                                                                                                                           /gene="pBt006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complement (5283. .5286) complement (5364. .5507)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complement (5364. .5507)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SAM-like domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (4985. .5251)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="integrase/recombinase family protein"
/protein_id="CAD30067.1"
/db_xref="GI:21685414"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="putative integral membrane
/protein_id="CAD30068.1"
/db_xref="GI:21685415"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complement (4634. .5275)
/gene="pBt005"
                                                                                                                                                                                                                                                                                                          /gene="pBt007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     translation="MAVLKDSNYIEMNTYNBIGFFKGIFWGLIFVVPFWSIMIATFIW"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               id in 47 aa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Similar to Bacillus anthracis pxo1-17 TR:Q9X2Y8 EMBL:AF065404) (47 aa) fasta scores: E(): 2.1e-12, 68.08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="pBt006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note="HMMPfam hit to PF02899,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="pBt005"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Similar to N-terminus of Bacillus anthracis pxol-18
TR.09X2Y9 (EMBL:AF065404) (315 aa) fasta scores: E():
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="pBt005"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="HMMPfam hit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene="pBt006"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene="pBt004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     xref="UniProt/TrEMBL:Q8KNX2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .ement (4634. .5275)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         type=INVERTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   table=11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              to PF00665, Integrase core domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Phage integrase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-terminal
                                             á
                                                                                                                             S
                                                                                                                                                                    밁
                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                        F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 1094; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RBS
RBS
gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sg
                                                                                                                                                                                                                                                                                                                                                                                                             41566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            41506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41266
                                                                                                                                                                                                                                                   41686
                                                                                                                                                                                                                                                                                                                               41626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             41206
                                                                                                                                                                      41746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             295
                                                                                                                                                                                                                                                                                        529
                                                                                                                                                                                                                                                                                                                                                                                                                                                  415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGGAAGTAGTAAAGATTTGAAATTAATG 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATACTTAACGATATTTCCAACATACATTTACCAAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="pBt009"
/note="Similar t
(EMBL:AF065404)
```

```
GLDGRYTIKLTHFMNEETEKANPYVYISPVIFTKDFFKLSIAAKKLFLDIAMQQHTET
TLKRSLDKQDERGNKTHFGGMYRFLHKKYPHQIRAVIEELTTALFCTGNPLFKICMQ
KGVKHTKRYTTLYLSIHSDFLCSKAAGEEQHRDFTPFKATKAKFIEAVLQEMNIG
ELSADMNKFIHVLKYTCHRQIRSVIRGLRDMVDRKEGYPTKIVTLKKLLHQTSQYOIG
LDTAAKEGIYPLJAQHIFKERNISPEQAVFNFGLHYSMYSLHNIKMFKNVHALLKQK
FAVPVTEESYYRNYLKYQEETLFRKYAYDQGVNLHAYIALEIEMREKLKVRGHKERTI
                                                                                                                                                                        complement (8168.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FLYLHKKCFTNGVIPNVTIHMMWEDYKQYKEEFAYIQHSQFYIALKKLNLHNIISIEN
                                                                                                                                                                                                                                                          PSDVREWFIEAIDKLPQEKLRVIELPKQFNLLEFMRTFERLVRAGVTITAPDQVLHAM
                                    gene="pBt009"
.10653
```

GTGAGTCCTATGTTTACAAGTAGTACGAAAAAATACGTTAAAAATAGAAACGACAGATTAT GTGAACCCTATGTTTACAAGTGGTGCGAAAAATAGGTTAAAGCTAGAAACGACAGATTAT 47.0%; ilarity 72.3%; Conservative <u>.</u> Score 792.4; DB 1; Pred. No. 1.4e-134; 0; Mismatches 396; Length 127923; Indels 24; Gaps 41205 60 4

8

CO Bacillus anthracis pxo1-14 TR:Q9X2Y5 (564 aa) fasta scores: E(): 1.6e-191,

ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC ATTCAGTCGGATAATTCTACTTTTAAAGGAAATTATCTGAATATATCTGGGGCGCGAGAC CTCCAAAATGGAGACTTTTCTG-----GGAATGATTGGACATTCGGTAATGATATTATC 234 ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA 354 294 41445 41389

GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT 474 GTTTCACGCTATGGAAAAGAAATAGATACAGTCATGAATGTACCATTTGATATCCCCGTAT CCGTATACACGTTACCTAGTAAGGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG 41565 41625

41505

GTATCTTCTAGGCCTGTTTGTAATGAATTATATGATGGTGAACAACAACCGTATCCAAAT 41685 ATGCAGCCTAATCCTTCATGT-----GGAGATTATCGCTGTGAATCATCGTCTCAGTAT

GGGAATGTAGGATATTATAATCCAATGTCAGCTTTTACGCCTTCTTACACATCTGATGCT 41745 GTGAGCCAAGGGTATCCTACACCAACAGATGGATATGCTCC-----CGATATGTATGCA

CATATTGACACCGGAGAAGTAGATACAAATGCAAATGTAGGTATTGATGTCTTATTAAAA 702 CGTCAGTGTATGCCAGGGAAAAAACAGATAGTCTGTCAAGATTCTCATCAGTTTAAGTTC 4180 ATTTCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCA 762 TGCCCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTT 642 41865

41925

```
RESULT 12
BACISRH3
LOCUS
                                                                             REFERENCE
AUTHORS
    COMMENT
                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                       DEFINITION
                JOURNAL
                                                  TITLE
                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  763
                                                                                                                                                                                                                   BACISRH3
4186 bp DNA lines Bacillus thuringiensis israelensis plasmid gene Bacilcidal protein (ISRH3), complete cds.
Sen,K., Honda,G., Koyama,N., Nishida,M., Neki,A., Sakai,H., Himento,M. and Komano,T. Cloming and nucleotide sequences of the two 130 kDa insecticidal protein genes of Bacillus thuringiensis var. israelensis Agric. Biol. Chem. 52, 873-878 (1988)
The genes of ISRH3 and ISRH4 that were 130 kDa insecticidalu
                                                                                                                         130 kDa insecticidal protein (ISRH3).
Bacillus thuringienais serovar israelensis
Bacillus thuringienais serovar israelensis
Bacteria; Firmicutes; Bacillales; Bacillaceae;
                                                                                                             cereus group
                                                                                                                                                                                          D00247.1 GI:216287
                                                                                                                                                                                                                                                                                                                                   AAGATTTCTAGCTA 42659
                                                                                                                                                                                                                                                                                                                                                           ACCCCTAATATCTA 1490
                                                                                                                                                                                                                                                                                                                                                                                             TATATCGAAAGCATTGAATTAATTTGCATGAACGAGTAATTGATTAATATTAATAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                    TATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTATTCCCAGATACAGATTGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGTATTCCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAATCAAGAAAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAAACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAAGCAGGAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTA 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTGTTATTGCCAAAAAAGAAGGCCTGGAAATGGGTATGTCACGCTTATGGATTGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTGTGATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAAT 1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGGAGTGCTGGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGGAGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTTTA 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATGTAACTGGAAATGCAGACGTACAACAAATAGATGGTGTTTTCTGTATTGGTTCTATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTATGATACAAGAAATATTATTAAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATATGATGCACGAAATGTCATAACAAATGGTGACTTTACACAAAGGATTACAGGGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGGTATGAATTATGACATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGGTATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACGCTGAGTATTTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACGCTGATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTATTCACAAATGTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTATTTACAAATGAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAA 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGCAAAACGTTCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAAAAAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAGATGGGGAAGCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAATGAACACATG
                                                                                            (bases 1 to 4186)
                                                                                                                                                                                                                                                       linear
                                                                                                                          Bacillus;
                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                       BCT
                                                                                                                                                                                                                                                       17-FEB-1998
                                                                                                                            Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                            1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1056
                                                                                                                                                                                                                                                                                                                                                                                             42645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  822
                ð
                                              밁
                                                                            S
                                                                                                          밁
                                                                                                                                   5
                                                                                                                                                                      밁
                                                                                                                                                                                                  8
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 1162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                2714
                                                                                                            2654
                                                                                                                                                                         2594
                                                                                                                                                                                                                                       2534
                                                                                                                                                                                                                                                                                                    2474
                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                    121
                 355
                                                                                                                                           235
                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                             Ь
```

GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT

GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT 60

0; Mismatches 512; Score 784.8; DB 1; Pred. No. 9.5e-133;

Indels Length

Gaps

4186; 30;

Conservative

46.5%;

GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120

GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA

2533

2473

2593

CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGGACATTCGGTAATGATATTATC AAAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA

CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG

ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA 354

2773

2713

294

ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC ATAGGATCCAATAATCCTATTTTTAAAGGAAAAATTTCTACAGATGCGTGGAGCACGAGAC CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA 2653

```
proteins of BTI were sequenced and compared with other insecticidal protein genes. ISRH3 and ISRH4 were identical in a region of the C-terminal 467 amino acids.
TRMDEYKI DGTLASVISNI TEPPEGLETTEFGESTNENTENQPTVNDYTHILSYIKTD
VIDYNSNRVSFAMTIKI VDENNQI TYDAL TOVPAVKSNELINATAKVI KGEGHTGGDLV
ALTSNGTLSGEMEIQCKTSI FNDETRS YGLER IR YAANS PI VLNVS YVLQGGHTGGDLV
ALTSNGTLSGEMEIQCKTSI FNDETRS YGLER IR YAANS PI VLNVS YVLQGVSRGTTIS
TESTFSRENNI I PTDLKYEERER YKDDEDAI VEMELSSNQLITAL QPLANTSNNQVI I
DRIEI I PI TQSVLDETENQNLESEREVVNAL FTNDAKDALN I GTTDYD I DQAANL VEC
I SEELY FKERMLLLDEVKNAKQLSGSRNVLQNGD FESATLGWTTSDNITI QDEDDE I FK
GHYLHMSGARD I DGTI FFTY I FQKI DESKLKPYTRYL VRGETVGSSKDVEL VVSRYGEE
I DAINNY DADLNYL YESTFDCEGSNRCETSAVPANI GNTSDMLYSCQYDTGKXHVVCQ
DSHQFSFTI DTGALDTNENI GWWMFKI SS PDGYAS LDNLEVI EEGP I DGEALSRVKH
MEKKMNDQNEAKRSETQQAYDVAKQA I DALFTNVQDBALQFDTTLAQI QY AEYLVQSI
MYLYNDWLSDVFGMNYDI YVELDARVAQARA LYDTRAI I KNGDFTGGVWGMTYTGNAD
VQQI I GVYSVLVLSNNSAGVSQNVHLQHNGYVLRVI AKKEGPGNGYVTLMDCEENQEK
LTFTSCEEGY I TKTVDVFPDTDRVRI EI GETEGS FY I ESI ELI CMNE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        / tranalation="MASGYPLANDLOGSMKATNYKOMLAMCERNOGYGVNPAAINSSG
VSTALKVAGAIKFVNPPAGTVLTVLSAVLPILWPTNTPTPERVWNDFMTNTIGNLIGG
TVTAYVRTDANAKMTVKDYLDQYTTKFNTWREDENNOGSYRTANITOFMLTSAKLRET
AVYFSNLVGYELLLLPIYAQVANFNLLLIRDGLINAQEMSLACAGDQLYNTMVQYTKE
YIAHSITWYNNGLDVLRNKSNOGWITFNDLLIRDGLINAQEMSLACAGDQLYNTMVQYTKE
YIAHSITWYNNGLDVLRNKSNOGWITFNDJKRBWTIQVDLILAFASYDPRRLPADKI
DNTKLSKTETFREIYTALVESSGSKSAIAALBAALTRDVHLFTWLKRVYEMTNITYDDL
RFLSANKIGFSYTNSSAMQESGIYGSSGFGSNLTHQIQLNSNVYKTSITDTSSFSNRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/trans1_table=11
/product="130 kDa insecticidal
/protein_id="BAA00178.1"
/db_xref="GI:216288"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   449. .453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /plasmid="pBTI-5 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="Shine-Dalgarno"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note="ClaI site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  b_xref="taxon:1430"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'strain="HD522"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Bacillus thuringiensis serovar israelensis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone="pBGH3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pBTI-6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein (ISRH3)"
```

S

밁

ð 밁 Ş 밁

á 밁

```
3482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2894
3842
                                                                                                                                                                                                                                                                                                                                                                                                                        1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2774
                                                                                                                                                                                                                                                                                                                           1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415
                                                                                                                                                                                                                                                                                                                                                                                                      GGGGTATCTCAAAACCTTGCATGCTCAAGATCATCATGTGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT 3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACAAGAG-----TTACACTATCATATTACTTTTAGATCATATTCAAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGAAGTAGATACAAATGCAAATGTAGGTATTGATGATGTCTTATTAAAAATTTCTAATCCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA 3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTATCCTTCTACCTTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCAGECTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTGAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                       ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTATTCCCA 1368
                                                                                                                                                                                                                                                                                                          AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA 1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC
                                  ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATG
                                                                                                                               GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
  ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAAATAACTAAAGCTTTAAAAACCAT
                                                                                          GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                       AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA
                                                                                                                                                                                                                                                                                 <u>AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGAAGGGTCTAATCGTTGTGAGACG 2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2893
  3901
                                                                                                                                                                                       3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2833
                                                                                          3841
                                                                                                                                        1428
                                                                                                                                                                                                                                                                                 3721
                                                                                                                                                                                                                                                                                                                                                                            3661
                                                                                                                                                                                                                                                                                                                                                                                                                          1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1008
```

ક В S 8 \$ 밁 δ 밁

밁

밁 8 밁 ð 문 ঠ 뮹 S 밁 S

밁 S 밁 S 멍 S

S

밁 δ 밁

S

61

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
E01905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                               밁
                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        വാ
                                                                                                              Query Match
Best Local Similarity
                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3902
                                                                                                                                                                                                                                                                                                                                         I (bases 1 to 4186)

I (bases 1 to 4186)

Komano, T. and Himeno, M.

EXECTICIDAL PROTEIN GENE
PATENT: JP 1989080294-A 1 27-MAR-1989;
SUNITOMO CHEM CO LTD, MARUBENI CORP
OS Bacillus thuringiensis
PN JP 1989080294-A/1
PD 27-MAR-1989
PP 21-SEP-1987 JP 1997238394
PF 21-SEP-1987 JP 197238394
PF C12R15/00, A01N63/00, C07K13/00, C12N1/
PC C12R1:19);
CC c12R1:19);
CC strandedness: Single;
CC topology: Linear;
CC topology: Linear;
CC topology: Linear;
CC anti-sense: No;
CC anti-sense: No;
CC arti-sense: No;
CC *source: strain=isulaelensis HD522;
FH Key
FT 5'UTR 461. 3868
FT CDS 4661. 3868
FT CDS 461. 3868
FT CDS 461. 3868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E01905 4186 bp DNA linear PAT 29-SEP-1997 genomic DNA encoding insecticide protein of Bacillus thuringiensis. E01905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus thuringiensis
Bacillus thuringiensis
Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E01905.1 GI:2170154
JP 1989080294-A/1.
                                                                                                                                                                                                                                                                 Ŧ
                                                                                                                                                                                                                                                                                                44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cereus group.
                                                  GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATACAAACAACTATAACCAAGACTCTAG-----TAATATGTATAATCAAAATTATACT 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGAAAGTTTTCTCCATGGTTTTTAATTTCTGCATTTATTAATTCTGGTACAAAAAAA 3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTAATCAAGGATATAACCGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTAGTATAGAACGTTTATCCAATAATAATTATCACCATTTAAACTATCCAAACTACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATAGAAAACATAAAAATAGATATCTAGAGGACATAAAATTTATACAAATATCAATTTC
                                GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGATCCAAGTTATGATGATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACA 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-SEP-1987 JP 1987238394

KOMANO TORU, HIMENO MICHIO

C12N15/00, A01N63/00, C07K13/00, C12N1/20, C12P21/02, (C12P21/02, C12R1.19);
                                                                                                Conservative
                                                                                                                                                                                                                                                                                                            mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                              *source: strain=isulaelensis HD522;
*source: clone=pUCH3;
                                                                                                                                                                              /organism="Bacillus thuringiensis"
/mol_type="genomic DNA"
/db_xref="taxon:1428"
                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                              46.5%;
                                                                                                                                                                                                                                                                                                              <1. 460
461. 3868
/product='Insecticide protein
thuringlensis'
461.3865</pre>
                                                                                                                                                                                                                                                               /product='Insecticide thuringiensis' 3869 .24186.
                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                              Score 784.8; DB 6;
Pred. No. 9.5e-133;
0; Mismatches 512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillaceae;
                                                                                                Indels
                                                                                                                                                                                                                                                                                                  protein
                                                                                                                               Length 4186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus;
                                                                                                                                                                                                                                                                                                                                                  <u>۾</u>
                                                                                                                                                                                                                                                                                                  e
E
                                                                                                  30;
                                                                                                                                                                                                                                                                                                                                                  Bacillus
                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1548
 120
                                  2473
                                                                 60
                                                                                                                                                                                                                                                                                                   召
                                                                                                                                                                                                                                                                                                                                                    Ę
```

```
1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGAAGTAGAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGGTGGCATGTAACTGGA
                                                                                                   CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA 1128
                                                                                                                                                                                            TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                             TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT
                                                                                                                                                                                                                                                                                          CTGGTACAGTCGATTCCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC
                                                                                                                                                                                                                                                                                                                                                    GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT 3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATTGGCACATGTGAAACCAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                GAACAAGAG-----TTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATTTGATTTTCATATTTGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTATCCTTCTACCTTTGAT-----TGTGAAGGGTCTAATCGTTGTGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGCAGGCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                               1068
                                                                                                                                                                                                                                                                                                      1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                          1188
                                                                        3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   294
```

음 성 음

ঠ

음 성 음

정 음 정 음 정 음

ş

유

유

음 &

8 8 8 8 8 8 8 8 8

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
BTITOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                           JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3542
                                                                                                                                                                                                                                                                                                                                                                 Bacillus thuringiensis ge
X07082
X07082.1 GI:40309
endotoxin; insecticidal p
Bacillus thuringiensis
Bacillus thuringiensis
Bacteria; Firmicutes; Bac
                                                                                                                                                                                                                                           Cereus group.

1 (bases 1 to 3684)

1 (bases 1 to 3684)

Tungpradubkul, S., Settasatien, C. and Panyim, S.

The complete nucleotide sequence of a 130 kDa mosquito-larvicidal

The complete nucleotide sequence of a buringiensis var. israelensis

delta-endotoxin gene of Bacillus thuringiensis var. israelensis

delta-endotoxin gene of Bacillus thuringiensis var. israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATACAAACAACTATAACCAAGACTCTAG-----TAATATGTATAATCAAAATTATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAAGGAACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTGATCCAAGTTATGATGATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTAGTATAGAACGTTTATCCAATAATAATTATCACCATTTAAACTATCCAAACTACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACA 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĂTTGĂATTAATTTGCĂTGAĂCGAGTGATTAĂTAĂĂĂĂTĂĂCTAAAGCTTTAAAĂĂCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAATCAAGGATATAACCGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATAGAAAACATAAAAAATAGATATCTAGAGGACATAAAATTTATACAAATATCAATTTC
                                                                                                                                                                                                                               kindly reviewed (13.June Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                3684
thuringiensis gene 1
/codon_start=1
/trans1_table=11
/protein_id="CAA30114.1"
/db_xref="GI:40310"
/db_xref="GOA:P05519"
/db_xref="GOA:P05519"
/db_xref="GOA:P05519"
/translation="MNSGYPLANDLQGSMKNTNYKDWLAMCENNQQYGVNPAAINSSS
                                                                                                                                        /db_xref="taxon:1428"
151. .3561
                                                                                                                                                                     organism="Bacillus thuringiensis"
|mol_type="genomic DNA"
|strain="israelensis"
                                                                                                                         note="unnamed
                                                                                                                                                                                                                                                                                                                                                                     Bacillales;
                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4105
                                                                                                                                                                                                                                                                                                                                                                                                                                                             4 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                             130
                                                                                                                         product;
                                                                                                                                                                                                                                                                                                                                                                   Bacillaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                           delta-endotoxin
                                                                                                                            delta-endotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                     Bacillue;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-APR-2005
                                                                                                                                                                                                                                                                                                                                                                     Bacillus
                                                                                                                            ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1248
```

VSTALKVAGAILKFVNPPAGTVLTVLSAVLPILMPTNTPTPERVWNDFMTNTGNLIDQ
TVTAYVRTDANAKMTVVKDYLDQYTTKENTWKREPNNOSYRTAVITQFNLTSAKLRET
AVYFSNLVGYELLLLPIYAQVANFNLLLIRDGLINAQEMSLARSRGDQLYNTMVQYTK
EYIAHSITWYNKGLDVLRNKSNGQMITFNDYKREMTIQVLDILALFASYDDRRYPADK
IDNTKLSKTETTREIYTALVESPSSKSIJALEAALTRDVHLFTWLKRVDFWTNTIYQD
LRFLSANKIGFSYTNSSAMQESGIYGSSGFGSNLTHQIQLMSNVYKTSITDTSSPSNR
VTKMDFYKIDGTLASYNSNITPTPEGLERTFFFGFSNTRNTPNQFYNDYTHILSYIKT
DVIDYNSNRVSFAWTHKIVDPNNQIYTDAITQVPAVKSNFLNATAKVIKGPGHTGGDL
VALTSNGTLSGRMEIQCKTSIFNDDFTRSYGLRIRKASNGUITTAIQPLAMTSNNQVI
IDRIEIIPTDLKYEERFRYKDFPDAIVPERSHOLITTAIQPLAMTSNNQVI
IDRIEIIPTOLSGRMEIQCKTSIFNDAFTSNGLUTTAIQPLAMTSNNQVI
IDRIEIIPTOLSGRMEIGCKTSAVDANIGNTSSNALIGTTDYDIDQAANLVE
CISSELYPKERMILLDEVKNAKQLSQSRNVLQNGDFESAFLGWTTSDNTITQEDDPIF
KGHYLHMSGARDIDGTIFPTYIFQKIDESKLKPYTRYLVRGFVGSSKOVELVVSRYGE
EIDAINNVPADLNYLYPSTFDCEGSNRCETSAVDANIGNTSDMLSGCYYDTGKKHVVC
QDSHQPSFTIDTGALDTNENIGVWNMFKISSPDGYASLDNLEVLEEGEIDGEALSRVK
COUNTRYLYDS AND TO CONTRYLORD OF CHARTANIA OF AVENTUREN DVQQIDGVSVLVLSNWSAGVSQNVHLQHNHGYVLRVIAKKEGPGNGYVT KLTFTSCEEGYITKTVDVFPDTDRVRIEIGETEGSFYIESIELICMNE"

Query Match
Best Local Similarity 72.2
1070; Conservative 2347 2227 2407 2167 2107 2635 2587 2527 2467 235 181 121 655 475 415 355 295 61 μ TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT GTAACACGTTACGGGAAAGAAATTGATGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAAGATTTGAAATTAATG ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAA ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGGCGAGAGAC ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC **CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA** CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC AMAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA 714 **ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA** ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCC CTGTATCCTTCTAC------CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA I PYVYNDWLSDVPGMNYD I YVELDARVAQARYL YDTRN I I KNGDFTQGVMGWHVTGNA DVQQI DGVSVLVLSNWSAGVSQNVHLQHNHGYVLR VI AKKEGPGNGYVTLMDCEENQE HMEKKWNDQMEAKRSETQQAYDVAKQAIDALFTNVQDEALQFDTTLAQIQYAEYLVQS 46.5%; 72.2%; .. Score 783.2; DB 1; Pred. No. 1.9e-132; 0; Mismatches 388; Indels Length 24; Gaps 180 2694 474 414 2466 354 2406 2346 2286 2226 120 2754 594 2634 2166 2586 2526 294 60 654 234 u ۲

S

밁 Ś 밁 ঠ 밁 S 밁 S 밁 ঠ 망

2755

GGGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCA

2814

유 밁 Ş 밁 S 망 S 밁 S 밁

δ В Ś 밁 S 밁 S 밁 ঠ 밁 S 밁 Ś 밁 Ş 밁 S 밁 S 밁 ð 밁 Ś 밁 S 3535 1429 3475 3415 1309 3295 1189 3235 1129 1069 3115 1009 3055 2995 2935 2875 2815 1369 1249 949 895 835 775 715 GATGGATACGCATCATTAGATATTTAGAAGTAATTGAAGAAGGCCCAATAGATGGGGAA CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAAACGCTGATCGA TGGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT GCACTGTCACGCGTGAAACACATGGAAGAAATGGAACGATCAAATGGAAGCAAAACGT **ATTGAATTAATTTĞCATĞAACĞAGTGATTAATAAAAATAAC** ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATC GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC ANATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCA ACACTTAAGTTCACTTCTTGCGAAGAAGAATATATGACAAAAACAGTAGAGGTATTCCCA AAAAAAGAAGGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC TCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAAACGT GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA <u>AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA</u> AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG 3576 1470 1068 1428 3474 3234 2874 3414 1188 1128 3114 1008 3054 2934 834 774 1368 1308 3354 1248 3294 948 2994 894

REFERENCE AUTHORS ACCESSION VERSION KEYWORDS RESULT 1 BTTOXD2 SOURCE ORGANISM LOCUS DEFINITION COMMENT JOURNAL PUBMED TITLE delta-endotoxin; endotoxin; Bacillus thuringiensis Bacillus thuringiensis BTTOXD2 3684 bp Bacillus thuringiensis israelensis protein (mosquito-specific toxin). Common features of Bacillus thuringiensis Diptera and Lepidoptera Eur. J. Biochem. 173 (1), 9-16 (1988) cereus group.
1 (bases 1 to 3684)
Chungjatupornchai, W., and Vaeck, M. X07423 X07423.1 GI:40353 2833395 Bacteria; Firmicutes; Data kindly reviewed (14-FEB-1989) by Chungjatupornchai Hofte, H., Bacillales; Bacillaceae; Bacillus; Bacillus toxin Seurinck, J., DNA AND gene linear BCT e for 130 kDa Angsuthanasombat, specific crystal 18-APR-2005

```
á
                                                  8
                                                                                         5
                                                                                                                                     밁
                                                                                                                                                               Ş
                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Sim:
Matches 1070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          terminator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bource
                                                            2293
                                                                                                                                                                                                                  2173
                                                                                                                                                                           121
                                                                                                   181
                      235
                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
ATAGGATCCAATTAATTCTATTTTAAAGGAAAATTTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                   GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                           GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                   GTGAGTCCTATGTTTACAAGTAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGACTAT
                                                                                                                                                                                                                  GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                          CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                    CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                       AAAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VETALIKYAGAILKEVNIPPAGTULTULSAVLPILMENINYKOMLAMCENNQQYGVNIPAAINSS
VSTALKVAGAILKEVNIPPAGTULTULSAVLPILMETINETPERVNINDEMINTGILLIQ
TVTAYVRTDANAKMTVVKDYLDQYTTKENTIMKERENNQSYRTAVITQENLTSAKLRET
AVYFSILLVGYELLLLPIYAQVAMENLLLIRDGLINAQEMSLARSAGDQLYNTMVQYTK
EYIAHSITWYNKGLDULRNKSNOQMITENDYKRENTIQVLDILALFASADDQLYNTMVQYTK
IDNTKLSKTEFTREIYTALVESPSSKSIAALEAALTRDVHLFTWLKRVDFWTNTIYQD
LRFLSANKIGFSYSTUSSAMQESGGIYGSGGFGSNLTHQIOLUSNIVYKTSITDTSSPSNR
VTKMDFYKIDGTLASYNSNITFTPEGLRTTFEGFSTNENTPNQPTVNDYTHILSYIKT
DVIDYNSNRVIGFSYSTNSNATGSGOTYGSGGTGSNLTHQIOLUSNIVYKTSITDTSSPSNR
VTKMDFYKIDGTLASYNSNITFTPEGLRTTFEGFSTNENTPNQPTVNDYTHILSYIKT
DVIDYNSNRVIGFSTNSNATGSTQATUNAKDAILVE
GISELYPKEMILIPDLKYEEFRYKDPFDAIVPRAKKSHQALITTAIQPLNMTSNNQVI
IDRIELIPITGSVLDETENQNLESEREVVLQNGDFESATLGWTTSDNITIQEDDPIF
KGHYLHNSGARDIDGTIFTYIFQKIDESCKKFYTRYLVRGFVGSSKDVELVVSRYGG
EIDAIMNVPADLNYLYPSTFDCEGSNRCETSAVPANIGHTSDMLYSCQYDTGKGTVC
QDSHQFSFTIDTGALDTRNIGWWMFKISSPANIGHTSDMLYSCQYDTGKGTVC
QDSHQFSFTIDTGALDTRNIGFWWMFKISSPANIGHTAQAQAYLVOG
HMEKKMUDQMEAKRSFTQQAYDVAKQALDALFTNVQDEBALGFTTLAQIQYAFLLVOG
IPYVNDWLSDVEGMNYDIYVELDARVAQARYLYDTRNIIKGDFTCGAUGMTVTGNA
DVQQIDGVSULVLSNWSAGVSQNVHLQHHHGYVLRVIAKEGFGGGYVTLMDCEENQE
KITFTSCFERGYTFTCTUNDFBNIGWTGTYDAFTIAAGIAFTTAGAICYAFUNDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="GOA:P05519"
/db_xref="InterPro:IPR001178"
/db_xref="InterPro:IPR005638"
/db_xref="InterPro:IPR005639"
/db_xref="InterPro:IPR008979"
/db_xref="UniProt/Swiss-Prot:P0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/transl_table=11
/protein_id="CAA30312.1
/db_xref="GI:40354"
/db_xref="GO:40354"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  terminato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KLTFTSCEEGYITKTVDVFPDTDRVRIEIGETEGSFYIESIELICMNE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="inverted repeat
3610. .3627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       157.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Bacillus thuringiensis"
/mal_type="genomic DNA"
/strain="istraelensis 4Q2-72"
/db_xref="taxon:1428"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="pot.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="inverted repeat A'"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="pot. ribosome binding | 157. .3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="unnamed protein product; Bt8 endotoxin (AA 1 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone="pMU388"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _xref="UniProt/Swiss-Prot:P05519"
                                                                                                                                                                                                                                                                                                                                                                                          46.5%;
                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      stem-loop
                                                                                                                                                                                                                                                                                                                                                                        Score 783.2; DB 1;
Pred. No. 1.9e-132;
0; Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      structure; pot. transcription
                                                                                                                                                                                                                                                                                                                                                                                                            Length 3684;
                                                                                                                                                                                                                                                                                                                                                                          24;
                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                          2352
                                                                                                                                       2292
                                                                                                                                                                                                                  2232
                                                                                                                                                                                                                                                        120
                      294
                                                                                                 234
                                                                                                                                                                                                                                                                                             2172
                                                                                                                                                                                                                                                                                                                                   60
                            5
                                                                            밁
                                                                                                               S
                                                                                                                                                       밁
                                                                                                                                                                                    5
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
    3421
                                      1309
                                                                                                                                                       3301
                                                                                                                                                                                              1189
                                                                                                                                                                                                                                    3241
                                                                                                                                                                                                                                                                                                                 3181
                                                                                                                                                                                                                                                                                                                                                       1069
                                                                                                                                                                                                                                                                                                                                                                                            3121
                                                                                                                                                                                                                                                                                                                                                                                                                                  1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2353 ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  595
    ADATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA
                                                                                                                                                                                                                                                            AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                           CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                    TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGGTACAATCGATICCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGTGACAAAAACAGTAGAGGTATTCCCA 1368
                                                                            AAAAAAGAACGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA 1308
                                                                                                                                                                                            GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC 1248
                                                                                                                                                                                                                                                                                                                 AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                              TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGAAACACAAGCCTATGATCCAGCAAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGT 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTATCCTTCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAACACGTTACGGGAAAGAAATTGATGATGCTATGAATGTTCCAAATGATTTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA 354
                                                                                                                                                         GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG 2640
                                                                                                                                                                                                                                                                               1188
                                                                                                                                                                                                                                                                                                                                                       1128
                                                                                                                                                                                                                                        3300
                                                                                                                                                                                                                                                                                                                                                                                              3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2412
        3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    414
```

This Page Blank (uspto)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                         Result
No.
                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                  იიიი
                                                                                                        O
                                                                                                                       a
  იი
   22118
22118
22108
                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                        Score
 599.88
                                                                                                                                                       67.6
67.6
                                                                                                                                                                                                                                                                11.
11.
11.
                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     February 15, 2006, 03:28:43 ; Search time 7110 Seconds (without alignments) 11094.658 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                              41078325 seqs, 23393541228 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-781-979-6
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 gtgagtcctatgtttacaag.....atcaaggatataaccgttaa 1686
 GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                             gb_est1:*
gb_est2:*
gb_htc:*
gb_htc:*
gb_est4:*
gb_est6:*
gb_est6:*
gb_est6:*
gb_gss1:*
gb_gss2:*
gb_gss3:*
                                                                                                                                                                                        Length DB
  100
                                                                 8 10
8 10
                                                                                                         10
CG807338
CG807323
CG807323
CG807323
CG807323
CG807194
D181814949
CG807194
DN7387486
DN738799
BX139987
DN738999
BX139987
CW973509
BX139987
CW4391253
CW4391253
CW4391253
                                                                                                                                                                                         ij
                                                                                                                                                CG807096
CG807194
CG807311
CG803197
                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                82156650
       CG807096 1118077G0
CG807194 1118079H0
CG807319 1118039H0
CG807319 1118080H1
CG807338 1118080H1
CG807136 1118039H0
CG807136 1118039H0
CG807136 1118080G0
CM187604 104 607_1
B1814949 PFESTOAAD
CG807194 1118078H0
CG807194 1118078H0
CM327486 104 823 1
DNG35195 Cm mx0 51
DN738989 Cm mx0 51
BX139987 Danio rer
CW973509 AIAA-aaa5
BZ063018 11a15b12
AZ217550 Sheared D
AQ160770 mbxb0005c
CW490123 fsbb001f2
                                                                                                                                                                                        Description
```

45	44	c 43	42	c 41	c 40	39	38	37	c 36	c 35	34		c 32							25	24	23
58.2	58.2	58.2	58.2	58.4	58.4	58.4		58.8	58.8	58.8	58.8	59	59	59	59	59.2	59.2	59.4	59.6	59.6	59.8	59.8
3.S	3.5	ω .ς	3.5	3.5	ω .s	ω. 5	ω	3.5	3.5	3.5	3.5	3.5	3.5	3.5	ω .σ	ა ა	ω	ω. 5	ω. 5	ω. 5	ω	ω .5
704	567	518	379	830	762	755	520	773	505	241	233	891	742	541	401	595	352	426	700	650	762	758
10	10	10	10	7	10	10	9	9	9	10	10	10	ø	11	9	9	10	10	9	φ	9	ø
CW855086	CW302816	CG086559	CG807081	CK398276	CL992030	CW501883	AQ656286	вн391959	BZ958194	CG807338	CG807203	CW952279	BZ781688	CNS 04 KUS	BZ781689	AZ216659	CW965330	CW289335	BZ421879	BZ423232	BZ062709	AZ183622
CW855086 shs2k12-4	CW302816 104_787_1	CG086559 PUJCQ11TD	CG807081 1118077E0	CK398276 AGENCOURT	CL992030 ZMMBHf000	CW501883 fsbb001f2	AQ656286 Sheared D	BH391959 AG-ND-180	BZ958194 PgH007N17	CG807338 1118080H1	CG807203 1118078H1		BZ781688 ii30h08.b	AL295309 Tetraodon	BZ781689 ii30h08.b	AZ216659 Sheared D	CW965330 AIAA-aaa1	CW289335 104_768_1	BZ421879 id46h10.b	BZ423232 id46h10.g	BZ062709 lle42d05.	AZ183622 SP_1001_A

ALIGNMENTS

	source	FEATURES						COMMENT	JOURNAL	TITLE	AUTHORS	REFERENCE				ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	DEFINITION	LOCUS	CG807096	RESULT 1
/organism="Zea mays" /orltivar="genomic DNA" /cultivar="mixed background w23/A188/B73" /cultivar="mixed background w23/A188/B73" /db xref="taxon:4577" /tissue_type="leaf" /dev_stage="adult" /lab host="DH10B" /clone_lib="1118 - RescueMu Grid S" /clone_lib="1118 to to to to the web /clone_lib="1118 to	1. 302			650	: 650 723 2227	855 California Ave. Palo Alto. CA 94304, USA	Department of Biological Sciences Stanford University	Contact: Walbot V	unpublished (2001)	Maize genomic sequences found using engineered RescueMu transposon		1 (bases 1 to 302)	clade; Panicoideae; Andropogoneae; Zea.	Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;	Zea mays	Zea mays	GSS.	CG807096.1 GI:38244598	CG807096 -	1118077G01.y1 1118 - RescueMu Grid S Zea mays genomic, genomic	CG807096 302 bp DNA linear GSS 10-NOV-2003		

CW434501 fsbb001f1

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 2
CG807194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                      Bource
                                                                                                                                                                                                                                                                                                                      Email: war--
Plate: 1118078 COLUMN.
Class: transposon-tagged.
Location/Qualifiers
471 mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1634 GTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAA 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1454 ATGATAACAATAATAACCTGCACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maize genomic sequences found using engineered RescueMu
Unpublished (2001)
Contact: Walbot V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Department of Biological Sciences Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CG807194.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1118078H01.y1 1118 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCATTCCGGTTGCACAT 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAATTATAATTATATTATAGTTATAATTATAATTATATATATAA 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 471)
                                                                                                                                                                                                                                                                                                                                                                                                                         California Ave, Palo
: 650 723 2227
: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
            units. For more information on RescueMu, go to the web site 'www.zmdb.isstate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DH10B
                                                                                                 /clone lib="1118 - RescueMu Grid S"
/note="Organ: leaf; Vector: RescueMu (engineered from pBlueScript backbone); Site_1: BamHI; Site_2: BglII; PBlueScript backbone) which maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and BglII, and ligated to form circular plasmids. DH10B cells were transformed and then screened on LB plates with ampicillin."
                                                                                                                                                                                                           /dev_stage="adult"
/lab_host="DH108"
                                                                                                                                                                                                                                              tissue_type="leaf"
                                                                                                                                                                                                                                                                             (mol_type="genomic DNA"
Cultivar="mixed background W23/A188/B73"
                                                                                                                                                                                                                                                                                                                    organism="Zea mays"
                                                                                                                                                                                                                                                                xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.0%;
transformed and then
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 67.6; DB 10
Pred. No. 3.3e-05;
0; Mismatches 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         471 bp
Mu Grid
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
IS Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mays genomic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 10-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genomic
plates with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           გ
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
CG807311
                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1634 GTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAA 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1574 CTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCATTCCGGTTGCACAT 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1454 ATGATAACAATAATAACCTGCACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       855 California Ave,
Tel: 650 723 2227
Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyt
Spermatophyta; Magnoliophyta; Liliopsida; Poales;
Clade; Panicoideae; Andropogoneae; Zea.
1 (bases 1 to 363)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      survey sequence.
CG807311
CG807311.1 GI:3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CG807311
1118080F01.y1 1118 -
                                                                                                                                                                                                                                                                                                                                                                                                                 Class: transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: walbot@stanford.edu
Plate: 1118080 column: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (20)
Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Department of Biological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Maize genomic sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAATTATAATAATTATATTATAGTTATATTATAATTATAATTATAATTATAATTATAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone libb "1118 - RescueMu Grid S"
/note="Organ: leaf; Vector: RescueMu (engineered from /note="Organ: leaf; Vector: RescueMu (engineered from pBlueScript backbone); Site 1: BamHI; Site 2: BglII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
cells were transformed and then screened ampicillin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ampicillin."
                                                                                                                                                                                                                                                         /dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                  /mol_type="genomic DNA"
/cultivar="mixed background W23/A188/B73"
                                                                                                                                                                                                                                                                                        tissue_type="leaf"
                                                                                                                                                                                                                                                                                                                                                                            organism="Zea mays'
                                                                                                                                                                                                                                                                                                                   db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Palo Alto, CA 94304, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 67.6; DB 10
Pred. No. 3.6e-05;
0; Mismatches 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363 bp
Mu Grid (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       found using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       engineered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NA linear GSS 10-NOV-2003
Zea mays genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Embryophyta; Tracheophyta;
a; Poales; Poaceae; PACCAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RescueMu transposon
                on LB plates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT 4
CG803197
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                     855 California Ave, Palo Alto, CA
Tel: 650 723 2227
Fax: 650 725 8221
Email: walbot@stanford.edu
Plate: 1118039 row: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      survey sequence.
CG803197
CG803197.1 GI:38238983
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1118039H04.y1 1118 - RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CG803197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAACCGT 1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCATTCCGGTTGCACA 1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 429)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                             /clome_lib="1118 - RescueMu Grid S"
/note="Torgan: leaf; Vector: RescueMu; (engineered from /note="Torgan: leaf; Vector: RescueMu; Site_2: BglII; BBlueScript backbone); Site_1: BamHI; Site_2: BglII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DH108 cells were transformed and then screened on LB plates with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genomic sequences found using engineered RescueMu transposon
                                                                                                                                                                                                                                                                                                                                                                                                                   transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                           /dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/cultivar="mixed background W23/A188/B73"
/db xref="texon:4577"
/tissue_type="leaf"
                                                                                                                                                                                                                                                                                                                                                                                  organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 66.2; DB 10;
Pred. No. 7.4e-05;
 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           429
66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ւ Grid
 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA linear GS
S Zea mays genomic,
10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
Length 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS 10-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 5
CG807338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1454 ATGATAACAATAACCTGCACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241 bp
1118080H12.1EL_x1 1118 - RescueMu
survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2001)
Contact: Walbot V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stanford University
855 California Ave, Palo Alto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Walbot, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                           Class: transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Very probable ligation site of ends cut by single endonuclease. Reverse complemented post-ligation sequence from source sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel: 650 723 2227 Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maize genomic sequences found using engineered RescueMu transposon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CG807338.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CG807338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: walbot@stanford.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCATTCCGGTTGCACAT 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAA 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 241)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                  /clone_lib="1118 - RescueMu Grid S"
/clone_lib="1118 - RescueMu Grid S"
/note="Organ: leaf; Vector: RescueMu (engineered from pBlueScript backbone); Site 1: BamHI; Site_2: BglII;
RescueMu is a 4.9 kb, modifIed maize Mu transposon designed to allow plasmid rescue from total genomic DNA.
Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DH108 cells were transformed and then screened on LB plates with ampleillin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1118080 column: 3
                                                                                                                                                                                                                                                                             /dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                   tissue_type="leaf"
                                                                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/cultivar="mixed background W23/A188/B73"
                                                                                                                                                                                                                                                                                                                                                                                                   organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                            db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 8.5e-05;
0; Mismatches 100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA
Grid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear GSS 10-NOV-2003
S Zea mays genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202
```

Query Match

Score 63.6;

DB 10;

Length 241;

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 6
CG807109
LOCUS
                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
Query Match
Best Local Similarity
Matches 152; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                       Plate: 1118077 column: Class: transposon-tagged
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CG807109 CG807109.1 GI:38244619
                                                                                                                                                                                                                                                                                                                                                                                                                   Email: walbot@stanford.edu
Plate: 1118077 column: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Maize geñomic sequences found using engineered RescueMu transposon
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1118077H01.y1 1118 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGAGCAAAGTTATAAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATAAATATAATTATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGATATAACCGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTTATACTAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           California Ave, Palo Alto, : 650 723 2227 : 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 311)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mays
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                  /clone lib="1118 - RescueMu Grid S"
/note="Torgan: leaf; Vector: RescueMu; (engineered from pBlueScript backbone); Site 1: BamHI; Site 2: BglII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DHIOB cells were transformed and then screened on LB plates with
                                                                        ampicillin.
                                                                                                                                                                                                                                                                                                             /mol_type="genomic DNA"
/cultivar="mixed background W23/A188/B73"
/db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                    dev_stage="adult"
lab_host="DH10B"
                                                                                                                                                                                                                                                                                                  tissue_type="leaf"
                                                                                                                                                                                                                                                                                                                                                           organism="Zea mays"
            3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             200
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
Score 62.6; DB 10;
Pred. No. 0.00052;
0; Mismatches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 0.000
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     h Grid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CA 94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0.00029;
ches 84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA lir
S Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
 Indels
                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genomic,
                             311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 10-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
```

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
CG803196/c
                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Snoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS.
Zea mays
                                                                                                                                                                                                                                                                                                               Email: walbot@stanford.edu
Very probable ligation site
Reverse complemented post-li
                                                                                                                                                                                                                                                                                                                                                                                                                                  Maize genomic sequences Unpublished (2001) Contact: Walbot V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                     Class: transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                         855 California Ave,
Tel: 650 723 2227
                                                                                                                                                                                                                                                                                                                                                                                                      Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CG803196.1
                                                                                                                                                                                                                                                                                                                                                             Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                    Department of Biological Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Walbot, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1118039H04.1EL_x1 1118 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CG803196
                                                                                                                                                                                                                                                                                                   Plate: 1118039 row:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAATTATATTTATAATTATACTTATAATTATAGTTATAATTATAATTATAATTATAATT 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATC 1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ÁTAATTATAATTATAATTATAATTATAGTTATATATAAGTATAGTTATAATTATATTT 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATACANACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATG 1609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGGT 1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATGT 1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 430)
/mol_type="genomic_DNA"
/cultivar="mixed_background
/db_xref="taxon:4577"
                                                                                                                                                                                                                                        organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:38238982
                                                                                                                                                                                                                                                                                                                                                                                          Palo
                                                                                                                                                                                                                                                                                                               post-ligation
                                                                                                                                                                                                                                                                                                                                                                                                                                                             found using engineered
                                                                                                                                                                                                                                                                                                                                                                                       Alto,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430 bp
                                                                                                                                                                                                                                                                                                                                of ends cut by single endonuclease.
                                                                                                                                                                                                                                                                                                                                                                                          ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Grid
                                                                                                                                                                                                                                                                                                                                                                                          94304, USA
                                                                                                                                                                                                                                                                                                                  sequence from source sequence.
                                                                                                                                                                                                               W23/A188/B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             တ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear GSS 10-NOV-2003
Zea mays genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RescueMu transposon
                     go to the web
he links for
o in 2002. DNA was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68
```

and BglII, and ligated to form circular plasmids. DH10B cells were transformed and then screened on LB plates with ampicillin."

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
CG807323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                      Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                         Email:
Plate:
Class:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         survey sequence.
CG807323
CG807323.1 GI:38244959
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                          Tel: 650 723 2227 Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CG807323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Department of Biological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1118080G01.y1 1118 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maize genomic sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Walbot, V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCA 1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAA 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAATAATAATAATTATAATAATAATAATAATAATTATAATAATAATAATAATAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 400)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         California Ave, Palo Alto, CA 94304,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                     transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                     walbot@stanford.edu
1118080 column: 3
units. For more information on RescueMu, go to the web site 'www.zmdb.iastate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BglII, and ligated to form circular plasmids. DH10B cells were transformed and then screened on LB plates with
                                                                                              /clone lib="1118 - RescueMu Grid S"
/note="Organ: leaf; Vector: RescueMu (engineered from pBlueScript backbone); Site 1: BamHI; Site 2: BglII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription mu elements insert preferentially into transcription
                                                                                                                                                                                                            /tissue_type="leaf"
/dev_stage="adult"
/lab_host="DH10B"
                                                                                                                                                                                                                                                               /mol_type="genomic_DNA"
/cultivar="mixed_background_W23/A188/B73"
/db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                    organism="Zea mays"
                                                                                                                                                                                                                                                                                                                                        . 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.7%;
53.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             400 bp
cueMu Grid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62.4; DB 10;
No. 0.00062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               using engineered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA linear GSS 10-NOV-
S Zea mays genomic, genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSS 10-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
```

밁 δ 밁 ঠ 밁 S

र्

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
CW187604/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Si
Matches 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                    Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Sorghum.

1 (bases 1 to 707)

Bedell, J.A., Budiman, M.A., Nunberg, A., Citek, R.W., Robbins, D., Jones, J., Flick, E., Rohlfing, T., Fries, J., Bradford, K., McMenamy, J., Smith, M., Holeman, H., Roe, B.A, Wiley, G., Korf, I.F., Rabinowicz, P.D., Lakey, N., McCombie, W.R., Jeddeloh, J.A. and Rabinowicz, P.D., Lakey, N., McCombie, W.R., Jeddeloh, J.A. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sequence.
CW187604
                                                                                                                                                                                                                                                                                                                                          Email: jbedell@oriongenomics.com
plate: 607 row: b column: 08
Seq primer: SWfor Forward
Class: methylation filtered
High quality sequence stop: 707.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Orion Genomics, LLC
4041 Forest Park Ave,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tel: 314 615 6979 Fax: 314 615 5975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Bedell JA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15660154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sorghum genome sequencing by methylation filtration PLoS Biol. 3 (1), e13 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Martienssen, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sorghum bicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sorghum bicolor (sorghum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CW187604.1 GI:54895932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CW187604 linear GSS 30-OCT-2004
104_607_11172560_148_36727_032 Sorghum methylation filtered library
(LibID: 104) Sorghum bicolor genomic clone 11172560, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAAA 1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATAATAATAATAATAA 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCA 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATACTAACAATGATGA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATATTAATÄAGTÄTAGTAATÄGTTATATTAATÄÄTTÄTAATAATAATTATAATAATAA 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                   prepared from purified nuclei was randomly sheared, end-repaired, size fractionated on enrich for the 0.5 to kb fraction, ligated into HincII-digested pBCSK(-) vector and electroporated into E. coli cells. This is a
methylation filtered library."
                                                                                                                                                                                                                           /organism="Sorghum bicolor"
/mol_type="genomic DNA"
/cultivar="ATx623"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ampicillin."
                                                                                                               /note="Organ: leaf; Vector: pBCSK(-); Site_1: HincII; DNA
                                                                                                                                                                                  /db_xref="taxon:4558"
/clone="11172560"
                                                                                                                                                        clone_lib="Sorghum methylation filtered library (LibID:
                                                                                                                                                                                                                                                                                                                         ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ed. No. 0.00076;
Mismatches 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 10
BI814949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: est@watson.wustl.edu
Library was constructed by Debopam Chakrabarti DNA
Washington University Genome Sequencing Center For
obtaining a clone please contact: L. David Sibley
(sibley@borcim.wustl.edu), Washington University
Seq_primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WashU Plasmodium EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tang, K., Cole, R., Chakrabarti, D., Haywood, R., Clifton, S., Pape, D. Marran, M., Hillier, L., Martin, J., Wylle, T., Dante, M., Theising, B. Bowers, Y., Gibbons, M., Ritter, E., Bennett, J., Jentes, E., Ronko, I. Tsagareishvili, R., Belaygorod, L., Franklin, C., Carr, L., Grow, A., Maguire, L., Richey, J., Wadkins, J., Kennedy, S., Levinso, D., Waterston, R., Wilson, R. and Sibley, D. Washu Plasmodium, EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BIB14949 STORM STO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: L. David Sibley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plasmodium falciparum 3D7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BI814949.1 GI:15907816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BI814949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TÄÄTAÄCAATÄÄCÄÄTÄÄTÄÄCÄÄCÄÄTÄÄCÄÄTÄÄGÄÄTÄÄCÄÄCÄGCÄÄTÄÄCÄÄCÄG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCT 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAACAAGAACAGTAACAATAACAGTAACAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGCTGTACATGTAATCAAGGATATAACCGTTA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATTATACTAACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTGTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCA 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGAATATATTTATATATTCATTAATTTGCTATTTACATAATAATAATAATAATAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 519)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              quality sequence stop: 4
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                            /mol type="manna"
/mol type="manna"
/db xref="taxon:36329"
/db xref="taxon:36329"
/db xref="taxon:36329"
/db xref="taxon:36329"
/db xref="taxon:36329"
/db xref="taxon:36329"
/db xref="taxon:36129"
/clone lib="plasmodium falciparum 3D7 asexual cDNA"
/note="Vector: pBluescript SK plus; Site_1: EcoRI; Sit
/note="Vector: pBluescript SK plus; Site_1: EcoRI; Site
/note="Vector: pBluescrip
erythrocytes by the acidic guanidinium-phenol chloroform method. The poly A+ RNA was isolated by the polyAT-Tract mRNA isolation system (Promega, WI) using streptavidin
                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Plasmodium falciparum 3D7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.7%;
51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 61.8; DB 10;
Pred. No. 0.00093;
0; Mismatches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 D 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
asexual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequencing information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Theising, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-OCT-2001
Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ronko, I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pape, D.,
                                                                                                                                                                                                                                     Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            by:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CG807194/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39
```

```
Matches 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1415 TTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGC 1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1535 TGTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAAA 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burvey Bequence.
CG807194
CG807194.1 GI:38
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Maize genomic sequences 
Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                              Email: walbot@stanford.edu
Plate: 1118078 column: 2
                                                                                                                                                                                                                                                                                                                                 Tel: 650 723 2227 Fax: 650 725 8221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1118078H01.y1 1118
                                                                                                                                                                                                                                                                                                                                                                            855 California Ave,
                                                                                                                                                                                                                                                                                                                                                                                               Stanford University
                                                                                                                                                                                                                                                                                                                                                                                                                          Department of Biological
                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Walbot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CG807194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGCTCCTAATTATTATGCTTGTAATAATTA 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGTACATGTAATCAAGGATATAACCGTTA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTATACTAACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTG 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATG 1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAATAATGATAATATGGAAATTCATCATAATATTAATGATAATAATAATAATAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 471)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                  transposon-tagged.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Magnesphere particles. Directional cDNA libraries were constructed by oligo d(T) priming of poly(A)+ RNA (5mg) into EcoRI and XhoI sites of 1 ZapII vector using the Zap cDNA synthesis kit (Stragene, CA). The average size of the CDNA inserts in the library was between 1.0 and 1.5kb. Clones were mass excised using the Exassist helper phage (Stratagene), the phagemids were precitytated with PEG 8000 and extracted with phenol/chloroform. Phagemid DNA was electroporated into DH10B cells."
                                                                                         /organism="Zea mays"
/mol type="genomic DNA"
/cultivar="mixed background
/db xref="taxon:4577"
/tissue_type="leaf"
                                                /dev_stage="adult"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.6%;
51.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ı
                                                                                                                                                                                                                                                                                                                                                                              Palo Alto, CA 94304, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              471 k
RescueMu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 61.4; DB 3; Pred. No. 0.0011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           found using engineered
                                                                                                                                                                                                                                                                                                                                                                                                                            Sciences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              u Grid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA lir
S Zea mays
Grid S"
RescueMu (engineered from
                                                                                                                                              W23/A188/B73"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genomic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RescueMu transposon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSS 10-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98
```

/clone_lib="1118 - RescueMu /note="Organ: leaf; Vector:

۲

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CW327486/c
                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                            TITLE
JOURNAL
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1414 TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTG 1473
Email: jbedell@uriv.gumn: 08
Plate: 823 row: e column: 08
Seq primer: T3 Reverse
Class: methylation filtered
High quality sequence stop: 661.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239
                                                                                                               4041 Forest ....
Tel: 314 615 6979
Fax: 314 615 5975
Rmail: jbedell@oriongenomics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence.
CW327486
                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 661)

Bedell, J.A., Budiman, M.A., Nunberg, A., Citek, R.W., Robb:
Jones, J., Flick, E., Rohlfing, T., Fries, J., Bradford, K.,
McMenamy, J., Smith, M., Holeman, H., Roe, B.A, Wiley, G., K.
Rabinowicz, P.D., Lakey, N., McCombie, W.R., Jeddeloh, J.A.
Martienssen, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CW327486 661 bp DNA linear GSS 31-OCT-2004 104 823_11478776_116_35978_028 Sorghum methylation filtered library (LibID: 104) Sorghum bicolor genomic clone 11478776, genomic survey
                                                                                                                                                                                                                                                                                                              Sorghum genome sequencing by methylation filtration PLOS Biol. 3 (1), e13 (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Sorghum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sorghum bicolor (sorghum)
Sorghum bicolor
                                                                                                                                                                                                                                                                     Contact: Bedell JA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CW327486.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATTATTATTATTATTATTATTATTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCTGTACATGTAATCAAGGATATAACCGTTA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTATACTAACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCT 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGAT 1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            n Genomics, LLC
Forest Park Ave,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pBlueScript backbone); Site 1: BamHI; Site 2: BgIII; RescueMu is a 4.9 kb, modified maize Mu transposon designed to allow plasmid rescue from total genomic DNA. Mu elements insert preferentially into transcription units. For more information on RescueMu, go to the web site 'www.zmdb.isstate.edu' and follow the links for 'RescueMu.' Grid S was grown at San Diego in 2002. DNA was extracted from leaf strips, double digested using BamHI and BgIII, and ligated to form circular plasmids. DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cells were transformed and then screened on LB plates with ampicillin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:55043674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 60.8; DB 10;
Pred. No. 0.0015;
0; Mismatches 132;
                                                                                                                                                                                                                     St. Louis,
                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                          63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robbins, D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                    Korf, I.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

ð

밁 Ś 밁

Snoo

SOURCE VERSION

COMMENT

S

밁

Ś

밁

ORIGIN

밁

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DN635195/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DN635195
697 bp mRNA linear EST 24-MAR-200 cm mx0 43h08 SP6 Green Shore Crab Multiple Tissue, Normalized Carcinus maenas cDNA clone Cm mx0 43h08 5' similar to ref[xp 509483.1| PREDICTED: sīmilar to G protein-coupled receptor 133; G-protein. Score = 33.1 bits (74), Expect = 6.6, mRNA
                                                                                                                                                                                            Marine DNA Sequencing and Analysis Center Mount Desert Island Biological Laboratory Old Bar Harbor Road, Salsbury Cove, ME 04/Tel: 207-288-9880 x474
Fax: 207-288-2130
                                                                                                                                                                                                                                                                                                          multiple tissues o
Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                     Eumalacostraca; Eucarida; Decapoda; Pleocyemate Eubrachyura; Portunoidea; Portunidae; Carcinus. 1 (bases 1 to 697)
                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca;
Eumalacostraca; Eucarida; Decapoda; Pleocyemata; Brachyu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Carcinus maenas
                                                                                                                                                                                                                                                                                          Contact: David W. Towle
                                                                                                                                                                                                                                                                                                                              Expressed sequence tags in a normalized cDNA library multiple tissues of adult green shore crab, Carcinus
                                                                                                                                                                                                                                                                                                                                                                    Towle, D.W. and Smith, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Carcinus maenas (green crab)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DN635195.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence.
                                                                                                                                                          Plate: 43 row: h
                                                                                                                                                                          Email: dtowle@mdibl.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAACCGTTA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGATAACAATAATAACCTGCACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCATTCCGGTTGCACAT 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                quality sequence stop: 512.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prepared from purified nuclei was randomly sheared, end-repaired, size fractionated to enrich for the 0.5 to ! kb fraction, ligated into HincII-digested pBCSK(-) vector and electroporated into E. coli cells. This is a
/mol_type="mRNA"
/db_xref="taxon:6759"
/clone="Cm_mx0_43h08"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         methylation filtered library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Sorghum bicolor"
/mol_type="genomic DNA"
/cultivar="ATx623"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="Organ: leaf; Vector: pBCSK(-); Site_1: HincII; DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:4558"
/clone="11478776"
                                                          organism="Carcinus maenas"
                                                                                                  Locat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone_lib="Sorghum methylation filtered library (LibID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.6%;
53.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:61785548
                                                                                                on/Qualifiers
                                                                                                                                                            column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 60.8; DB 10;
Pred. No. 0.0016;
0; Mismatches 107;
                                                                                                                                                                                                                                      ME 04672 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                 Brachyura;
                                                                                                                                                                                                                                                                                                                                  prepared maenas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 24-MAR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380
```

```
RESULT 14
DN738989/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DN738989
712 bp mRNA linear EST 31-MAY Cm mx0 51h03 SP6 Green Shore Crab Multiple Tissue, Normalized Carcinus maenas cDNA clone Cm mx0 51h03 S' similar to ref |NP 907078.1 | TRANSLOCASE PROTEIN TATC HOMOLOG - Wolinella succinogenes DSM 1740. Score = 33.9 bits (76), Expect = 4.0, r
                                                                                                                                                                                   Marine DNA Sequencing and Analysis Center
Mount Desert Island Biological Laboratory
Old Bar Harbor Road, Salsbury Cove, ME 04672 USA
Tel: 207-288-9880 x474
                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 712)
Towle, D.W. and Smith, C.M.
Expressed sequence tags in a normalized cDNA library prepared from multiple tissues of adult green shore crab, Carcinus maenas
Unpublished (2005)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Arthropoda; Crustacea; Malacostraca; Eumalacostraca; Eucarida; Decapoda; Pleocyemata; Brachyura; Eubrachyura; Portunoidea; Portunidae; Carcinus.
                                                                       Email: dtowle@mdibl.org
Plate: 51 row: h column: 03
Seq_primer: SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Carcinus maenas
                                                                                                                                                                                                                                                                                               Contact: David W. Towle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Carcinus maenas (green crab)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTATTATTATAATAATAATGATAATGGTAATAACAATTATAATAATAATAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAAATACTAGCGAT 1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTATACTAACAATGATGA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCTAAAAGGAAAGCAACTATAATATTAATAATAATAATGATGATAATAATAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTG 1473
                      quality sequence stop: 508.
Location/Qualifiers
                                                                                                                                                               207-288-2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the CDNA library by Invitrogen. Plasmids were isolated and inserts end-sequenced by the Marine DNA Sequencing and Analysis Facility at the Center for Marine Black Sequencing and Analysis Facility at the Center for Marine Biological Laboratory (J.N. Forrest, Jr., Director). Traces were processed for submission to dbEST by trace2dbest software (Parkinson, Anthony and Blaxter, unpublished software). The project was supported by NIH Grant Number P20-RR-16463 from the INBER Program of the National Center for Research Resources (P.H. Hand, PI)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="Gill, hypodermis, heart, hepatopancreas, antennal gland, brain, testis, muscle"
/dev_stage="Adult"
/clone_lib="Green Shore Crab Multiple Tissue, Normalized"
/note="Vector: pCMV Sport 6.1; Total RNA samples were prepared individually from each tissue, checked for quality, then pooled for construction and normalization of the cDNA library by Invitrogen. Plasmids were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GI:62115999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.6%;
56.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 60.8;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .0016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 697;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EST 31-MAR-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.0, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
```

ક 밁 S 밁 ş 밁 ORIGIN

REFERENCE AUTHORS

TITLE

COMMENT

JOURNAL

FEATURES

VERSION KEYWORDS SOURCE

ACCESSION

```
BX139987
LOCTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local
                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1534 GTGTATTACCAAGGGTATACAAACAACTATAACCAAGACTCTAGTAATATGTATAATCAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1474 CACACGGGTAATATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGAT 1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1414 TTTTATATAGATAGCATCGAGTTGCTTTTGTATGCAAGGATATGATAACAATAATCCTG 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        113;
                                                                                                                                                                                                                                                                                         Campus, Hinxton, Cambridgeshire, CB10 1SA, UK. humquery@sanger.ac.uk Unpublished This sequence was generated from the T7 end of part of the Daniokey BAC Library created by R. Keygene. Further details:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes; Cyprinidae; Danio.

1 (bases 1 to 844)

Humphray, S. J., Huckle, E. and Durham, J.L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Danio rerio genomic clone
BX139987
                                                                                                                                                                                                           http://www.sanger.ac.uk/Projects/D_rerio/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
Submitted (13-MAR-2003) The Sanger Institute, Submitted (13-MAR-2003) The Sanger Institute (13-MAR-2003) The Sanger (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Danio rerio (zebrafish)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BX139987.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTATACTAACAATGATGA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTÄTTÄTTATAATAATAATGATÄÄTGGTÄATAÄCAATTATAATAATAATAATAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATAATAATAATAATAA 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            isolated and inserts end-sequenced by the Marine DNA Sequencing and Analysis Facility at the Center for Marine Functional Genomic Studies, Mount Desert Island Biological Laboratory (J.N. Forrest, Jr., Director). Traces were processed for submission to dbEST by trace2dbest software (Parkinson, Anthony and Blaxter, unpublished software). The project was supported by NIH Grant Number P20-RR-16463 from the INBRE Program of the National Center for Research Resources (P.H. Hand, PI)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="Green Shore Crab Multiple Tissue, Normalized note="Vector: pCMV Sport 6.1; Total RNA samples were prepared individually from each tissue, checked for quality, then pooled for construction and normalization of the cDNA library by Invitrogen. Plasmids were
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="Cm_mx0_51h03"
/tissue_type="Gill, hy
antennal gland, brain
/mol_type="genomic DN
/db_xref="taxon:7955"
/clone="DKEY-99E7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Carcinus maenas"
/mol_type="mRNA"
/db_xref="taxon:6759"
/clone="Cm_mx0_51h03"
                                                                                                                     organism="Danio rerio"/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:27971314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 60.8; DB 8;
Pred. No. 0.0016;
D; Mismatches 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ill, hypodermis, heart, hepatopancreas,
brain, testis, muscle"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DKEY-99E7, genomic survey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wellcome . E-mail e
                                                                                                                                                                                                                                                                                                                                                                                     BAC 99E7.
                                                                                                                                                                                                                                                                                                                                         Plasterk and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSS 13-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                              enquiries:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Normalized"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome
```

```
ş
                                                                         8 8 8 8
                                                                                                                                                        밁
                                                                                                                                                                            Ś
                                                                                                                                                                                                 밁
Search completed: February 15, 2006, 05:32:47 Job time : 7114 secs
                                                                                                                                                                                                                                         Query Match 3.6%; Score 60.8; DB 10; Length 844; Best Local Similarity 51.9%; Pred. No. 0.0017; Matches 137; Conservative 0; Mismatches 127; Indels 0;
                                                                             1416 TTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACCAATAATAACCTGCA 1475
                                                          1656 CTGTACATGTAATCAAGGATATAA 1679
                                                                                                                                                            733 CAATAATAATAATAATAATGATAA 756
                                                                                                                                                                                                                                                                                              /note="vector pIndigoBAC-536"
                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                            Gaps
```

This Page Blank (uspto)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   914.8
784.8
783.2
783.2
783.2
783.2
783.2
783.2
783.2
783.2
783.2
783.2
782.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
772.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N_Geneseq_21:*
1: geneseqn1980
2: geneseqn2900
3: geneseqn2001
4: geneseqn2001
6: geneseqn2002
7: geneseqn2002
8: geneseqn2003
9: geneseqn2003
10: geneseqn2000
11: geneseqn2000
12: geneseqn2000
13: geneseqn2000
14: geneseqn2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IDENTITY NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 February 15, 2006, 03:24:57; Search time 1063 Seconds (without alignments)
10570.717 Million cell updates/sec
1100

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4996997 seqs, 3332346308 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-781-979-6
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtgagtcctatgtttacaag.....atcaaggatataaccgttaa 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    geneseqn2003as:*
geneseqn2003bs:*
geneseqn2003cs:*
geneseqn2003ds:*
geneseqn2004as:*
geneseqn2004bs:*
geneseqn2005s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     geneseqn2001bs:*
geneseqn2002as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geneseqn2000s:*
geneseqn2001as:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        geneseqn1980s:*
geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         geneseqn2002bs:*
   1686
5990
4391
3684
3684
3688
4065
41065
4108
3535
4134
4934
4571
4571
3940
4359
3690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                            14 6 4 4
                                                                                                                                                                                                                                                                                                                                                                         ADR89405
ADR89400
AEA61394
AAN82106
ABK14949
AEA61392
AAN92515
AAN91003
AAN93054
ABX13486
AEB90814
ABK51132
AAQ36866
                                                                                                                                                                                                                                      AAN96139
AAN81490
AAQ81178
AAQ14669
                                                                                                                                                                  AAN60055
AAN93059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9993994
                     AANB2106 Sequence
Abk14949 Bacillus
Aea61392 Bacillus
Aan92515 Sequence
Aan91003 Sequence
Aan96103 Bacillus
Aan81490 Insectici
Aaq81178 B.t. toxi
Aaq81178 B.t. toxi
Aaq14669 Dipteran
Aan60055 VB131 Clo
Aan93054 Delta-end
Aan93054 Delta-end
Aan93054 Delta-end
Abx13486 B. popill
Aeb90814 Paenibaci
Abk51132 CONA enco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
   Aaq36866 Coleopter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Adr89405 AXMI-0080
Adr89400 AXMI-008
Aea61394 Bacillus
RESULT 1
ADR89405
ID ADR89405
ID ADR89405
AC ADR8
AC ADR8
AC ADR8
AC AXMI
XX ES;
KW ES;
KW Lepi
KW Pest
XX Dest
XX Dest
XX Dest
XX PFT CDS
FT CDS
FT
```

357.4 331 315 315 313 313 313 311.8 311.8 311.8	311.8 311.8	311.8	306.4	306.4	•		303	302.6	302.6	302.6	302.6	302.6	302.6	•	302.6
118.55 118.55 118.55 118.55 118.55 118.55	18.5	18.5	18.2	18.2	18.2	18.1	18.0	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
3797 3756 3471 4896 4896 4366 4366 43671	3471 3471	3471	4359	4359	4004	3414	3414	3621	3621	3621	3621	3633	3633	3633	4874
22218116212	NN			14	N	N		σ	12	14	14	თ	12	14	σ
AAQ58975 AAAN50525 AAQ51704 AAD41974 AADF31301 ADF31306 ABX13497 ABE890830 ABX1967 AAC8708940	AAQ27167 AAQ28940	AAQ38653	ABX13496	AEB90828	AAQ05680	AAQ56922	AAQ41745	ABK87234	ADL15304	AEB45606	AEB34684	ABK87235	ADL15306	AEB45608	ABK87247
0 0 1			Abx13496 B. popill	Aeb90828 Paenibaci	Aaq05680 btPGS1245	Aaq56922 Bacillus		_	Adl15304 B thuring	Aeb45606 B. thurin	Aeb34684 Bacillus	Bac	Adl15306 B thuring		Abk87247 Bacillus

ALIGNMENTS

```
20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
20-FEB-2004;
19-FEB-2004;
19-FEB-2004;
19-FEB-2004;
19-FEB-2004;
19-FEB-2004;
19-FEB-2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ss; gene; delta-endotoxin; delta-endotoxin associate polypeptide; expression cassette; transformation; transgenic; plant; bacteria; lepidoptera; coleoptera; pest; pesticide; resistance; pesticidal activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus thuringiensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADR89405 standard; cDNA; 1686 BP.
                                                                                                                                                                                                                                        20-FEB-2004; 2004WO-US005829
                                                                                                                                                                                                                                                                                                                WO2004074462-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AXMI-008orf2 coding sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADR89405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-NOV-2004
2003US-0448633P.
2003US-0448797P.
2003US-0448806P.
2003US-0448810P.
2003US-0448812P.
2004US-00782020.
2004US-00782096.
2004US-00782141.
2004US-00782141.
2004US-00782141.
                                                                                                                                                                                                    2003US-0448632P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                    product= "AXMI-008orf2"
                                                                                                                                                                                                                                                                                                                                                 transl_except= pos:1.
                                                                                                                                                                                                                                                                                                                                                                                                          .1686
                                                                                                                                                                                                                                                                                                                                                    ب.
س
                                                                                                                                                                                                                                                                                                                                                      aa:Met
```

```
Query Match
Best Local S
Matches 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence encodes an isolated delta-endotoxin. Some of the delta-endotoxin coding sequences of the invention have alternative start codons, producing more than one protein from a single open reading frame. The nucleic acid sequences of the invention are useful in DNA constructs or expression cassettes for transformation and expression in plants and bacteria. The nucleic acids and corresponding polypeptides are useful for killing lepidopteran or coleopteran pests. Compositions containing the delta-endotoxins of the invention, and methods for their production, are useful for the production of organisms with pesticide resistance, specifically bacteria and plants. These organisms are useful for associated proteins that have delta-endotoxin or delta-endotoxin-associated proteins that have besticidal activity, or for detecting the presence of delta-endotoxin or delta-endotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Seguence 1686 BP; 624 A; 268 C; 348 G; 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ATHE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             isolated delta-endotoxin and delta-endotoxin-associated nucleic acids polypeptides, useful for killing lepidopteran or coleopteran pests or producing organisms with pesticide resistance.
                                      541
                                                                             481
                                                                                                                        481
                                                                                                                                                                 421
                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1686;
                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATHENIX CORP.
GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT 60
                                                                                                                                                                                       CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                      GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCAATAATCCTATTTTTAAAGGAAAATTTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAMATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                               GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hargiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ID NO 17; 178pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Koziel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1686;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>র</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Duck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NB,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ċ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                          360
                                    600
                                                                               540
                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                             5
                                                                                                 밁
                                                                                                                               Ş
                                                                                                                                                                   밁
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                  1321
                                                                                                                                                                                  1501
                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                  1441
                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                          CCTGGAAAAGGGTATGTAACGATGATGGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGGA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACAACCATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACACAAGCATTATTATCAAATGAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACATGTGAAACAAAAGGAAAAGGAAATGGAAACACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAA
                                                        TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC 1680
                                                                                                                        TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGATGACCTGCAT
                                                                                                                                                                                                            ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTGCATGCTCAAGATCATGATATGTGTTACGTGTGATTGCCAAAAAAGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACANATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                  1500
                                                                                                                                                                                                                                                                                                                                                      1440
                                                                                                                                                                                                                                                                                                                                                                                                                                      1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                     1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
```

성 유

S

음 중 밁 S 밁 ર્ક 밁 á 밁 ঠ

ঠ

뮍

문

밁 S

Indels Length

0

240 2488 180 2428 120 2368 60

Other; 5980; <u>,</u>

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
20-FEB-2003;
          codons, producing more than one protein from a single open reading frame. The nucleic acid sequences of the invention are useful in DNA constructs or expression cassettes for transformation and expression in plants and bacteria. The nucleic acids and corresponding polypeptides are useful for killing lepidopteran or coleopteran pests. Compositions containing the delta-endotoxins of the invention, and methods for their production, are useful for the production of organisms with pesticide resistance, specifically bacteria and plants. These organisms are useful for generating altered or improved delta-endotoxin or delta-endotoxin-associated proteins that have pesticidal activity, or for detecting the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ss; gene; delta-endotoxin; delta-endotoxin associate polypeptide;
expression cassette; transformation; transgenic; plant; bacteria;
lepidoptera; coleoptera; pest; pesticide; resistance;
pesticidal activity.
                                                                                                                                                        This sequence encodes an isolated delta-endotoxin. Some of the delendotoxin coding sequences of the invention have alternative start
                                                                                                                                                                                                  Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-FEB-2003;
19-FEB-2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-FEB-2004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-SEP-2004.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2004074462-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-NOV-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADR89400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADR89400
 presence of
                                                                                                                                                                                                                                                                                                                                                                                                                             19-FEB-2004;
19-FEB-2004;
                                                                                                                                                                                                                          isolated delta-endotoxin and delta-endotoxin-associated nucleic polypeptides, useful for killing lepidopteran or coleopteran per producing organisms with pesticide resistance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                     2004-635574/61.
DB; ADR89402.
                                                                                                                                                                                                                                                                                                                             z
                                                                                                                                                                                                                                                                                                                                                         ATHENIX CORP
                                                                                                                                                                                                SEQ ID NO 12; 178pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thuringiensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard; cDNA; 5980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTAA
                                                                                                                                                                                                                                                                                                                                                                                 2003US-0448632P.
2003US-0448633P.
2003US-0448830P.
2003US-0448806P.
2003US-0448810P.
2003US-0448810P.
2004US-00781979.
2004US-00782020.
2004US-00782031.
2004US-00782571.
2004US-00782571.
2004US-00782571.
 delta-endotoxin or delta-endotoxin-associated proteins
                                                                                                                                                                                                                                                                                                                            Hargiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2004WO-US005829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product= "AXMI-008"
/transl_except= pos:168. .170,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *tag=
                                                                                                                                                                                                                                                                                                                             H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             coding
                                                                                                                                                                                                                                                                                                                               Koziel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВÞ
                                                                                                                                                                                                                                                                                                                               <u>გ</u>
                                                                                                                                                                                                                                                                                                                               Duck NB,
                                                                                                                                                                                                                                                                                                                               Carr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aa:Met
                                                                                                                                                                     Some of the delta-
                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                                                                                                                          pests
                                                                                                                                                                                                                                         acids
sts or
                                                      ð
                                                                                                           á
                                                                                                                                                                     S
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SXS
 S
                            В
                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic acids in products or organisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2309
                             3209
                                                                                                                                            3089
                                                                                                                                                                                                                                                           2969
                                                                                                                                                                                                                                                                                                                 2909
                                                                                                                                                                                                                                                                                                                                                                                                                                2789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2549
                                                                                                                                                                                                 3029
                                                                                                                                                                                                                                                                                                                                                                      2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1686;
                                                         901
                                                                                                                                                                      781
                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                             GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                                           ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                        GCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                   TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                           GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                         GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTTGACACCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                               CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTTACGGGAAAGAATTGATGCTATCATGAATGTTCCAAATGATTTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCAATAATCCTATTTTAAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
 ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                             GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                     ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                            GCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                  TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                 AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                        CGTTACGGGAAAGAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2018 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       976 C; 1146 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1686;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1840 T; O U; O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

1020 3268 3208 900 3148 840 3088

960

3028

780

2968 660 2908

720

2848

600

2788 480 2728 420 2668 360 2608 300 2548

540

```
RESULT 3
AEA61394
ID AEA6
XX AEA6
XX AEA6
XX Baci
XX Baci
XX Baci
XX Inse
XX I
                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                      US2005124803-A1
                                                                                                                                              Bacillus thuringiensis
                                                                                                                                                                               Insecticide; crystal protein;
                                                                                                                                                                                                                   Bacillus thuringiensis Cry19Aa coding sequence,
                                                                                                                                                                                                                                                        11-AUG-2005
                                                                                                                                                                                                                                                                                                                            AEA61394 standard; DNA; 4391 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGGTATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                    CGTTAA 3994
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGTTAA 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGGAFAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTTGCATGCTCAAGATCATGATGGATATGTGTTACGTGATTGCCAAAAAAGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGTATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                       Location/Qualifiers 719. .2665
                                                      /*tag= a
/product= "Cry19Aa
                                                                                                                                                                                 Cry19Aa;
                                                                                                                                                                                 gene;
                                                                                                                                                                                                                     ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 3388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3328
                                                      밁
                                                                                    5
                                                                                                                         밁
                                                                                                                                                     δ
                                                                                                                                                                                         밁
                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 1187;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 200
P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              positions 414 through 418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; SEQ ID NO 4; 63pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dean DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-JUN-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-AUG-2004; 2004US-00929754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (OHIS ) UNIV OHIO STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                      3219
                                                                                                                             3159
                                                                                                                                                                                                3099
                                                                                                                                                                                                                                                                         3039
                                                                                                                                                                                                                                                                                                                                               2979
                                                                                                                                                                                                                                                                                                                                                                                                                    2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2799
                    475
                                                                                                                                                             355
                                                                                                                                                                                                                                    295
                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2005-417057/42.
DB; AEA61393.
                                                                                                                                                                                                                                                                                                         235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
ATGCAGCCTAATCCTTCATGT---GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTG 531
                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAATTTTATGCTTACAAGTGGTGCGAAAAATATGTTAAAACTCGAAACGACAGATTAT 2858
                                                      GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT 474
                                                                                                                             CCGTATACGCGTTATCTAGTCAGGGGATTTGTGGGGAAGTAATAATG 321
                                                                                                                                                                                                ATATATGGAACGATATTCCCAACGTATATATACCAAAAATTGATGAATCCAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATAGATCAAATGGCGAATGCTATAGAAAATATGTCAGGTGAACAATATTCACAGGAA
                                                                                                                                                   CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG 414
                                                                                                                                                                                                                         ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                         ATTCAGGCAGATAATGCAACTTTTAAAGGGAACTATCTGCATATGTCTGGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                CTCCAAAATGGAGACTT-----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC 234
                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATGATGCAATGGCATGACATAAAATATGCCAAACAATTGAGTCAAGCACGTAATTTA
                                                                                                                                                                                                                                                                                                         ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC 294
                                                                                                                                                                                                                                                                                                                                               Abdullah MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2003US-0498826P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54.3%;
76.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
New modified Bacillus thuringiensis insecticidal crystal proteins (i.e. Cry4BB and Cry1BAB) with enhanced toxicity, useful for reducing or eliminating populations of target insects (i.e. mosquitoes) that are vectors of disease.
```

The present invention relates to modified insecticidal Bacillus thuringiensis crystal proteins Cry4Ba and Cry19Aa which have enhanced toxicity against a variety of insects, e.g. mosquitos and lepidoptera. The modified proteins are useful for reducing or eliminating populations of target insects that are vectors of disease, particularly mosquitoes. The present sequence is the coding sequence of the wild-type Cry19Aa protein, which can be modified with: a substitution of amino acids at positions 355 through 358 with amino acids tyrosine, glutamine, aspartic acid, and leucine; an insertion of at least one amino acids at arginine) after position 358 and a deletion of the amino acids at

Sequence 4391 BP; 1557 A; 630 C; 914 G; 1290 T; 0 U; 0 Other;

GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT 60 Score 914.8; DB 14; Pred. No. 1.1e-194; Mismatches 357; Indels 18; Length 4391; Gaps

3158

3096

3038

2918

```
4116
                                                                                                                                                                                                                                                                                                                   1306
                                                                                                                                                                                                                                                                                                                                                        4056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3519
                                                                                                                           4236
                                                                                                                                                                                                                                         1366
                                                                                                                                                                                                                                                                                                                                                                                         1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3279
               1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          646
               .
ස
                                                                          ATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAA
                                                                                                                                                AGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAAT
                                                                                                                                                                                                                                         CCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGAT
                                                                                                                                                                                                                                                                                               GAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTC
                                                                                                                                                                                                                                                                                                                                                        GCGAAAAAAGGGTCTGGGAAAGGCTATGTAACGAGGATGAGTTGTAATGGTAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                    GCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACGAAATGTCATAACAAATGGGGATTTTGCACAAGGATTACAAGGGTGGCATGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTATGATATACCAAGAGTTAAACGCGCGTATCATGCAAGCACGCTATTTATACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATTTGGTACAGTCGATTCCATATGTACACAATGAGTGGTTACCGGATTTTCCAGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTACA---GGAGAAGAGTTAAACTATGATGTTACATTGTCACACATTAAGAACGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMAMGCGCATGGAAACAMAGCGAGTCTATGACCGAGCAMAACAGGCGGTAGATGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTCACCCGATGGCTACGCGACATTAGATAATTTAGAAGTAATTGAAGAGGGACCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTGTACGCCCGGCAAAAAACATGTGGTATGTCATGATTCTCATCAATTCAAGTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTTGATTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGTAGGATATTATAATCCAATGCCAGTTTCTCAGCCTTCTTACACATCCGATACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCCAAGGGTATCCTACACCAACAGATGGAT----ATGCTCCCGATATGTATGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTACCTTCTATGCCGGTCTGTAACGAATTATATGATGGTCAACAACCGTATCCAAATAGG
                                                    GGAÑAAGTAGAAGTACAGCAAATGAACGGAACGTCTGTATTAGTCTTATCCAATTGGAGC
                 1547
                                                                                                                                                                                                                                         1425
                                                                                                                                                                                                                                                                                                                                                                                         1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               585
                                                                                                                                                                1485
                                                                                                                                                                                                     4235
                                                                                                                                                                                                                                                                              4175
                                                                                                                                                                                                                                                                                                                   1365
                                                                                                                                                                                                                                                                                                                                                        4115
                                                                                                                                                                                                                                                                                                                                                                                                                                 4055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3398
                                                                                                                           4295
밁
                             Ś
                                                                      문
                                                                                               S
                                                                                                                                            문
                                                                                                                                                                              δ
```

S

4356

ନ୍ଧ

4357

밁

중 유

ち 음 성

멍

중 유

중 유

8 8 8 8 8 8

중 음

성 유

& B 8

밁

중 유

중 음 중 음

뭥

```
Query Match
Best Local S
Matches 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25-MAR-2003
31-OCT-2002
13-NOV-1990
                                                                                                                                                                                This gene is ligated to a promoter region enabling expression in Cyanobacteria and the resultant chimeric gene is used to produce Bacillus thuringiensis 8 (Bt 8) protein. A truncated form of the protein can also be produced using a shorter gene. Transformed cyanobacteria and their progeny can be used in insecticidal compsns., esp, for controlling mosquitos. (Updated on 1-OCT-2002 to add missing OS field.) (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bt 8
                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                  Disclosure; Page ?; 50pp;
                                                                                                                                                                                                                                                                                                                                                                                                              04-MAR-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAN82106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAN82106 standard;
                                                                                                                                                                                                                                                                                                                                                                    (UNMS) UNIV MICHIGAN
(PLAN-) PLANT GENETIC
(UNMI) UNIV MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                  03-MAR-1988;
2233
                                                                                                                                                                                                                                                                                                                    1988-271170/38
DB; AAP82314.
                                                                                                                                                                                                                                                                                                                                                 MA,
                                                          61
                                                                                                                               Similarity
                                                                              GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                        GTGAGTCCTATGTTTACAAGTAGTAGGACAGATAGGAAAGTAGGACAGACTATT
                                                                                                                                                                                                                                                                                    gene for expression in Cyanobacteria - or insecticidal active protein produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    thuringiensis
           GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contg.
AMATIGCT GTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                                                                                                                                                                Chungjatup
                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (revised)
(revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        insecticides; mosquitos;
                                                                                                                                                                                                                                                                                                                                                                                                              87US-00021405
                                                                                                                                                                                                                                                                                                                                                                                                                                  88WO-US000734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /*tag= b
157. .3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45. .149
                                                                                                                                                              1302 A; 585
                                                                                                                               46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA;
                                                                                                                                                                                                                                                                                                                                                                               STATE SYST.
                                                                                                                                                                                                                                                                                                                                                  Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ם
                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                     <u>,.</u>
                                                                                                                     Score 784.8; DB 1;
Pred. No. 1.3e-165;
0; Mismatches 387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ВP
                                                                                                                                                              C; 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                  ۲
                                                                                                                                                              <u>و</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         88
                                                                                                                                                              1103 T;
                                                                                                                                                               0
                                                                                                                                                                                                                                                                                     contg. DNA fragment
by Bacillus strain.
                                                                                                                                       Length 3684;
                                                                                                                      Indels
                                                                                                                                                              U; 1 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein.
                                                                                                                      24;
                                                                                                                      Gaps
                                                                                                                                                                                                                                    Bacillus
 2292
                                                           120
                                        2232
                                                                               2172
                                                                                                   60
                                                                                                                       ω
```

```
3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                    GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                      AATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                          CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGGATACGCTACAGTAGGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGATCTTATTAAAAATTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCATATACACGTTATCGAGTAAGAGGGTTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA
                                                                                                                                                      AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                            TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                           TATGATGTATATCAAGAGTTAAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACAAGA-----GITACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGGAAACACAACCAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTATCCTTCTAC------CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGAAGAAGATGATCCTATTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                               GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     894
                                                                                                 1248
                                                                                                                                                      3300
                                                                                                                                                                                                     1188
                                                                                                                                                                                                                                                       3240
                                                                                                                                                                                                                                                                                                                                                                                                           1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               234
```

음 성 음

S

음 성 밁 S

음 성

밁 S

음 중

유정 멍 S 밁 5

```
RESULT 5
ABK14949
IID ABK14949
IID ABK14949
ABK1494
ABK14949
ABK14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                  P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-MAR-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mosquito
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2003
08-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                  Vaeck MA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US6335008-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Toxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABK14949;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABK14949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3361
                                                                                                                                                                                                                                                                                                                                         2002-163196/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bt8;
                                                                                                                                                                                                                                                                                                                                                                                                                              VIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         thuringiensis serovar israelensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     thuringiensis variant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         :8; insecticidal; cyanobacterium;
control; glutamine synthetase in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACACTTAAGTTCACCTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTATTCCCCA 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC
                                                                                                                                                                                                                                                                                                                                                                                Chungjatupornchai
                                                                                                                                                                                                                                                                                                                                                                                                                              MICHIGAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87US-00021405
88US-00243798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92US-00837625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /transl_except=
/transl_except=
/transl_except=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  product= "Bacillus thuringiensis toxin/transl_except= (pos:1708. .1710, aa:Ser/transl_except= (pos:2356. .2358, aa:Glr/transl_except= (pos:3067. .3069, aa:Glr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157. .3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /standard_name= "Shine-Dalgarno (SD) Sequence"
/note= "Consensus ribosome binding site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3684
                                                                                                                                                                                                                                                                                                                                                                                  ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       israelensis toxin
                                                                                                                                                                                                                                                                                                                                                                                     Mcintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibitor; inoculum;
                                                                                                                                                                                                                                                                                                                                                                                  ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            synechocystis 680;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aa:Ser)
aa:Gln)
aa:Gln)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Bt8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Bt8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endotoxin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3420
```

Novel chimeric gene expressed in cells of Cyanobacterium for controlling mosquitoes in water, comprises a DNA fragment comprising promoter region and a DNA fragment containing gene encoding for insecticidal protein.

Example 2 Fig 2a; 36pp; English.

The present invention relates to a new chimeric gene expressed in cells of a Cyanobacterium such as Synechocystis 680. The gene comprises a DNA fragment having a promoter region, for expression of a DNA fragment in the Cyanobacterium, and a fragment coding for an insecticidally active protein endotoxin produced by Bacillus thuringiensis, B. sphaericus or kurstaki strain, or for a truncated form of the protein. Cyanobacterium is useful for controlling mosquitoes in water by applying the bacterium œ

δ

ð

g

ş

유 성 유

S

문 ર્ 유 성

문

ち 음 ち

밁

948

3000 894 2940

3240 1128 3180 1068 3120 1008 3060

```
Query Match
Best Local Simi
Matches 1070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to a region to be controlled, where the cyanobacterium which contain and express the bar gene are selectively protected against competing non-transformed Cyanobacteria by treating the region with glutamine synthetase inhibitors. The invention is useful as viable inoculum to settle the regions, especially the swamps and all stagnant waters which promote the growth of mosquito larvae. Cyanobacterium provides better control of mosquitoes, ensures a long-term destruction of mosquitoes, guarantees direct uptake of the bacterium by the mosquitoes and assures more stable availability of the toxin in the vicinity surface since it is self replicating and floats at or near the water surface. The present nucleic acid sequence encodes the B. thuringiensis variant israelensis toxin (BEB) protein of the invention. (Updated on 29-AUG-2003 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3684 BP; 1301 A; 587 C; 694 G; 1102 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2113
                                             2821
                                                                                                                                                                                                                 2701
                                                                                                                                                                                                                                                                                                  2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2233
                                                                                                                              2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            415
                                                                                                                                                                                                                                                                                                                                                                                                                           475
                                                                                                                                                                      655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
      775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAAACGACAGACTAT
                                           GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                            ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTTGATTTTCATATTGACACC 654
                                                                                                                                                                                                                                                                                                  TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                               CTGTATCCTTCTAC-----CTTTGATTGTGAAGGGTCTAATCGTTGAGACG 2640
                                                                                                                                                                                                                                                                                                                                                                                                                ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT 2172
    GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGT
                                                                     GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA 774
                                                                                                                              GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                    GGAGAAGTAGATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGTATACACGTTACCTAGTAAGGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC 2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                             ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 783.2; DB 6;
Pred. No. 2.9e-165;
0; Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3684;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                              2820
                                             2880
                                                                                                                                                                                                               2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
RESULT 6
AEA61392
ID AEA6
XX AEA6
AC AEA6
XX AEA6
XX AEA6
XX Insection
CONT 11-A
XX Insection
CONT ENT CDS
FT CDS
FT CDS
FT CDS
FT CDS
XX US20
XX US20
XX XX
PF 30-J
XX XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                          30-AUG-2004; 2004US-00929754
                                                                                                                                                                                                                                                       Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                        Bacillus thuringiensis Cry4Ba coding sequence,
                                                                                                                                                                                                                                                                                                                                                                                   11-AUG-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AEA61392 standard;
                                                                   09-JUN-2005.
                                                                                                                                                                                                                                                                                                                                                                                                                           AEA61392;
                                                                                                           US2005124803-A1
                                                                                                                                                                                                                                                                                              Insecticide; crystal protein; Cry4Ba; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGTATCTCAAAACTTGCATGCTCAAGATCATGATTATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAATATTATTAAAAAATGGTGATTTTACACAAGGGGTAATGGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACTGTCACGCGTGAAACACATGGAGAAGGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACACTTAAGTTCACTTCTTGCGAAGAAGAAGATATATGACAAAAAACAGTAGAGGTATTCCCA 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGTACCATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                     Location/Qualifiers
157. .3567
                                                                                                                                                  /product= "Cry4Ba"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA;
                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    쁌
```

S

H

3582

3540 1428 3480 3420 1308 3360 1248 3300 1188

δ

S 문 S 밁 ð 밁

밁

유

ð

밁 ঠ 밁 Ś 밁 S 밁 S 밁 Ś 밁 S 8 S

밁

```
Matches 1070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to modified insecticidal Bacillus thuringlensis crystal proteins Cry4Ba and Cry19Aa which have enhanced toxicity against a variety of insects, e.g. mosquitos and lepidoptera. The modified proteins are useful for reducing or eliminating populations of target insects that are vectors of disease, particularly mosquitoes. The present sequence is the coding sequence for the wild-type Cry4Ba protein, which can be modified as follows: the amino acid aspartic acid at position 454 is substituted with, for example proline, glycine, alanine or threonine, and at least two or more additional amino acids are inserted after the substituted amino acid at position 454 are selected from the combinations of alanine and threonine, and at position 454 are selected from the combinations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of alanine and threonine or alanine and valine. In addition, the modified Cry4Ba protein may comprise the following substitutions: Thr456 is replaced with Ala, Asn578 is replaced with alanine; Asn579 is replaced with alanine; Ile580 is replaced with alanine, phenylalanine or tyrosine; Ile581 is replaced with alanine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New modified Bacillus thuringiensis insecticidal crystal proteins (i.e. Cry4Ba and Cry19Aa) with enhanced toxicity, useful for reducing or eliminating populations of target insects (i.e. mosquitoes) that are vectors of disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3684 BP; 1302 A; 587 C; 692 G; 1103 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; SEQ ID NO 2; 63pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AEA61391.
EMBL; X07423.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2003; 2003US-0498826P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (OHIS)
                                                                                                                                                                                                                                2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2005-417057/42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNIV OHIO STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAACACGTTACGGGAAAGAAATTGATGATGCTATCATGAATGTTCCAAATGATTTTGGCCTAT
                                                                                                                                                                    CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGATAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                        ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAA 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
  ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                     ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                             GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                           ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 783.2; DB 14
Pred. No. 2.9e-165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3684;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                2472
                                                                                                                                                                                                                                                                                                                                                                                                                 2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
  534
                                                                                                                                                                                   414
                                                                                                                                                                                                                                                                                                                        2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2172
RESULT 7
AAN92515
ID AAN9
XX
AC AAN9
                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭐
  AAN92515;
                                             AAN92515
                                                                                                                                                                                                                                                                                                                                                3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGGATACGCATCATTAGATATTTAGAAGTAATTGAAGAAGGCCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGTATCCTTCTAC----
                                             standard; DNA;
                                                                                                                                                                                          ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC
                                                                                                                                                                                                                                                     GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                                                                                                                  AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                    ACACTTAAGTTCACTTCTTGCGAAGAAGAATATATGACAAAAACAGTAGAGGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATGATGTATATAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGGTGCA 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGAAGTAGAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC
                                                                                                                                                             ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA 1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGATTGCC 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                             4065
                                             BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG 2640
```

3180

3000

834 2880 2760

654

2820

밁 र् 밁 δ 8 Ş 밁 ş 문 S 밁 ঠ 밁 ફ 밁 र्

3540

```
ঠ
                                                                                                              B
                                                                                                                                Ş
                                                                                                                                                       밁
                                                                                                                                                                               ঠ
                                                                                                                                                                                                           밁
                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                  당
                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                  ð
                밁
                                         S
                                                                   밁
                                                                                                                                                                                                                                                                                                                                                      Matches 1161; Conservative
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-MAR-2003
23-DEC-1990
15-MAY-1990
                                                                                                                                                                                                                                                                                                                                                                                                Sequence 4065 Bb; 1471 A; 595 C; 752 G; 1247 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Insecticide protein gene - from Bacillus thuringiensisisulaelensis
strain, used to produce protein toxic to diptera larvae, eg. aedes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                strain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1989-134798/18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SUMO )
(MARU-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-SEP-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-SEP-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-MAR-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JP01080294-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence of
                                                                                                                                                                                                                                                                                                                                                                                                                         protein gene has high insecticide activity to diptera larvae
ss. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                          2354
                                                                                                                                                                                                                                                                                                       2294
                                                                                                                   2534
                                                                                                                                                               2474
                                                                                                                                                                                                             2414
                        2654
                                                                     2594
                                                                                                                                                                                     181
                                                                                          295
                                                                                                                                       235
  415
                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig 2-1 to 2-3; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MARUBENI :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAP93308.
                                                                                                                                                                                                           GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                          GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                                                                                                                                                                                                                                                                       GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                   GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
 GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                     CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                     ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAA
                                                                                   ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                              CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                    CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                        CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                        ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       insecticide gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (revised)
(revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     diptera larvae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87JP-00238394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             87JP-00238394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                             46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IND KK
                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 513; Indels 30;
                                                                                                                                                                                                                                                                                                                                                               Score 783.2; DB 1;
Pred. No. 3e-165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from Bacillus thuringiensis israelensis
                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                     such
                                                                                          354
                                                                                                                                                                                                                                   180
                         2713
                                                                     2653
                                                                                                                   2593
                                                                                                                                        294
                                                                                                                                                                                      234
                                                                                                                                                                                                             2473
                                                                                                                                                                                                                                                         2413
                                                                                                                                                                                                                                                                                120
                                                                                                                                                                                                                                                                                                       2353
                                              414
                                                                                                                                                                                                                                                                                                                                                                                                                                     86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
             δ
                                   밁
                                                      δ
                                                                               밁
                                                                                                S
                                                                                                                           밁
                                                                                                                                              δ
                                                                                                                                                                   밁
                                                                                                                                                                                           8
                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                        3482
                                                                                                                                                                                                                                                                     3422
                                                                                                                                                                                                                                                                                                                   3362
                                                                                                                                                                                                                                                                                                                                                                                                              3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2714
              1489
                                                                                 3662
                                                                                                      1369
                                                                                                                             3602
                                                                                                                                                    1309
                                                                                                                                                                           3542
                                                                                                                                                                                                 1249
                                                                                                                                                                                                                                               1189
                                                                                                                                                                                                                                                                                           1129
                                                                                                                                                                                                                                                                                                                                         1069
                                                                                                                                                                                                                                                                                                                                                                3302
                                                                                                                                                                                                                                                                                                                                                                                       1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2774 CTGTATCCTTCTACCTTTGAT-----TGTGAAGGGTCTAATCGTTGTGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                    949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    595
 TATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATTGGCACATGTGAAACAAAAGGAAAAGAAATTGGAAACACACATGGAGAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCA
                                                                                                                                                                                        GGGGTATCTCAAAACTTGCATGCTCAAGATCATGATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                      AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                           TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGTTATGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAACAAGAG-----TTACACTATCATATTACTTTTAGATCATATTTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGGAAACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATTTGATTTTCATATTGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                    ÁTTGÁATTAATTTĞCATĞAACĞAGTGATTAATAAAAAATAACTAAAGCTTTAAAAACCAT
                                                                                                                             AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA
                                                                                                                                                                           AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA
                                                                                                                                                                                                                         GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                   AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                 TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                          ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATG
                                     3781
                                                                                                                                                      1368
                                                                                                                                                                                                    1308
                                                                                                                                                                                                                                                1248
                                                                                                                                                                                                                                                                                             1188
                                                                                                                                                                                                                                                                                                                                           1128
                                                                                                                                                                                                                                                                                                                                                                                         1068
                                                                                                                                                                                                                                                                                                                                                                                                                3301
                                                                                                                                                                                                                                                                                                                                                                                                                                      1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2821
                                                           1488
                                                                                                        1428
                                                                                                                                3661
                                                                                                                                                                                                                                                                       3481
                                                                                                                                                                                                                                                                                                                    3421
                                                                                                                                                                                                                                                                                                                                                                  3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      654
                                                                                                                                                                                                                           3541
```

```
RESULT 8
ANAIST
ANAIST
ANAIST
XX ANAIS
XX ANAIS
XX ANAIS
XX ANAIS
XX ANAIS
XX Seq.
DE 
밁
                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       음 중
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                           Query Match
Best Local Similarity
Matches 1069; Conserv
                                                                                                                                                                                                 A toxin active against dipteran insects, having a specified as sequence or a mutant having the same protein secondary structure or, if the structure is altered, having the same biological activity, is claimed. Also claimed is a DNA molecule including a nucleotide sequence encoding the as sequence: The novel toxin gene is toxic to dipteran insects e.g. mosquitos. (Updated on 25-MAR-2003 to correct PR field.)
                                                                                                                                                                                                                                                                                                                                                                                                       Bacillus
isolated
                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1989-087579/12.
P-PSDB; AAP93341.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-SEP-1987;
16-JUN-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MYCO ) MYCOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP308199-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus thuringiensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence of israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-MAR-2003
27-JAN-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAN91003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAN91003
  1957
                                                                                                                                                                                                                                                                                                                                                                 <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                 ďď
                                                                                                                                                                                                                                                                                                                                                                                                     thuringiensis toxin toxic to dipteran insects - produced from Bacillus thuringiensis var. israelensis strain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                         GTGAGTCCTATGTTTACAAGTAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGACTAT
                                                                                                                                                             3535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTGATCCAAGTTATGATGATTAA 3985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTAATCAAGGATATAACCGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAGTATAGAACGTTTATCCAATAATAATTATCACCATTTAAACTATCCAAACTACAAT 3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATAGAAAACATAAAAAATAGATATCTAGAGGACATAAAATTTATACAAATATCAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATACAAACAACTATAACCAAGACTCTAG-----TAATATGTATAATCAAAATTATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGAAAGTTTTCTCCCATGGTTTTTAATTTCTGCATTTATTAATTCTGGTACAAAAAATA
                                                                           46.4%;
ilarity 72.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                 7-10 ; 13pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          toxin gene derived from a Bacillus thuringiensis var. (B.t.i.) microbe identified as strain HD567.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                diptera; mosquito;
                                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87US-00098359.
88US-00207690.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88EP-00308498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                           1247 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA; 3535
                                                                                                                                                             573 C;
                                                                             0,
                                                                           Score 781.6; DB 1;
Pred. No. 6.6e-165;
0; Mismatches 389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88
                                                                                                                                                           666 G; 1049 T; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1686
                                                                                                                                                           U; O
                                                                             Indels
                                                                                                                 Length
                                                                                                                                                             Other;
                                                                           24;
                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          ý
                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1602
                                                                           ω
                                                    á
                  문
                                                                                              유
                                                                                                                                  5
                                                                                                                                                                            밁
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                              2905
                                                                                                                                                                                                                                                              2845
                                                                                                                                                                                                                                                                                                                                            2785
                                                                                                                                                                                                                                                                                                                                                                                                                          2725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2017
                                                                                                                                                                                                                      949
                                                                                                                                                                                                                                                                                                    895
                                                                                                                                                                                                                                                                                                                                                                                  835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                  AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGGTGGCATGTAACTGGA
                                                      CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                        TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATATGATGCA 1068
                                                                                                                                                                                TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT
                                                                                                                                                                                                              CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                              GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT
                                                                                                                                                                                                                                                                                          GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                            TCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                      TGGGAAACACAACCAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                          GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGGATACGCATCATTAGATTATTAGAAGTAATTGAAGAAGGCCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGAAGTAGATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTTGATTTTCATATTTGACACC 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAACACGTTACGGGAAAGAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTATCCTTCTAC-------CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATGCTGTTATTAGATGAAGTTAAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                          1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                              2844
                                                                                                                                                                                                                                                                                                                                                                                                                            2784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2076
                                                                                                                                                                                                                                                                                                      948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294
```

60

ហ

2533

```
AAN96139
AAN96139
AAN96139
AC AAN9
AC Baci
XX

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-AUG-2003
25-MAR-2003
15-MAY-1990
                                                                                                                                                                                                                    Insecticide protein gene - from Bacillus thuringiensisisulaelensis strain, used to produce protein toxic to diptera larvae, eg. aedes
                                                                                                                                                                                                                                                                                   WPI; 1989-134793/18.
P-PSDB; AAP93308.
                                                                                                                                                                                                                                                                                                                                              (SUMO )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JP01080294-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAN96139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAN96139
                                       Sequence
                                                                                                                                                                                Fig 2(1) - 2(3); pages 639-40; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                         21-SEP-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-SEP-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAR-1989
                                                                           The gene is used to produce protein toxic to diptera larvae, e.g. aedes. (Updated on 25-MAR-2003 to correct PF field.) (Updated on 25-MAR-2003 to correct PF field.) (Updated on 25-MAR-2003 to correct PA field.) (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3085
                                                                                                                                                                                                                                                                                                                                              SUMITOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        thuringiensis; israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thuringiensis, israelensis strain; toxin; diptera larvae; aedes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   thuringiensis israelis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA 1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGTATCTCAAAACCTTGCATGCTCAAGATCATCATGTGATATGTGTTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAAATACC 3426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (revised)
(revised)
(first en
                                       BP; 1501 A; 627 C; 774 G;
                                                                                                                                                                                                                                                                                                                                                                                                         87JP-00238394
                                                                                                                                                                                                                                                                                                                                                                                                                                                 87JP-00238394
                                                                                                                                                                                                                                                                                                                                              CHEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461. .3867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product= "toxin"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entry)
    46.0%;
                                                                                                                                                                                                                                                                                                                                                                   IND KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
    Score 776;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          strain
                                          1282
  DB 1;
                                       Η.
Length 4184;
                                          0
                                          u;
o
                                       Other;
                                                                                                  -2003 to
(Updated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3204
                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                     Ş
                                                               밁
                                                                                                Ś
                                                                                                                                      밁
                                                                                                                                                                            á
                                                                                                                                                                                                                      멼
                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity Matches 1163; Conserv
                       1009
                                                                                                                                                                                                                                                                                                          3182
                                                                                                                                                                                                                                                                                                                                                                                      3122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2474
                                                                                                                                            3302
                                                                                                                                                                                                                          3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            595
                                                                                                                                                                                                                                                                835
                                                                                                                                                                                                                                                                                                                                                                                                                            715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAAATTTTATATGATGCA 1068
                                                                                                                                                                                                                                                                                                    GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGAATGAACAAAATCCTCAGGAA
                                                                                      CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                                                                                                                                                  GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGCCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTATCCTTCTACCTTTGAT-----TGTGAAGGGTCTAATCGTTGTGAGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGTATACACGTTACCTAGTAAGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                            GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                              GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTCAAGAAGATGATCCTATTTTAAAGGGCATTACCTTCATATGTCTGGGGGCGAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                               TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGTTATGAAT
                                                                                                                                                                                  GAACAAGAG-----TTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGA 948
                                                                                                                                                                                                                          TCGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                 TGGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1.2e-163;
0; Mismatches 510;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                               3421
                                                                                                                                               3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2653
```

3121

714

3301

894

3241 834 3181 774 3061 654 594

2941 534 2893

3001

474

2833 414 2773 354 2713

294

밁 Ş

```
ARABSULT 10
AANA1490
ID AANA1
XX AANA1
XX AANA1
XX Insec
XX Insec
XX Insec
XX ET CDS
FT CDS
FT CDS
FT Intro
XX TP632
                                                                                                                                                                                                                                                                                          24-OCT-2003
05-NOV-1990
                   26-SEP-1988
                                                 JP63230090-A
                                                                                                intron
                                                                                                                                                                                             Bacillus
                                                                                                                                                                                                                             Insecticidal
                                                                                                                                                                                                                                                         Insecticidal
                                                                                                                                                                                                                                                                                                                                                                        AAN81490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAAATÇTCATAACAAATGGTGACTTTACACAAAGGATTACAGGGATGGCACGCAACAGGA 1128
                                                                                                                                                                                           thuringiensis
                                                                                                                                                                                                                                                                                                                                                                     standard; DNA; 4934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTAATCAAGGATATAACCGTTAA 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGATCCAAGTTATGATGATTAA 4104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTAGTATAGAACGTTTATCCAATAATAATTATCACCATTTAAACTATCCAAACTACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAATGATGACCTGCATTCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATAGAAAACATAAAAAATAGATATĆTAGAGGACATAAAATTTATACAAATATCAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATACAAACAACTATAACCAAGACTCTAG-----TAATATGTATAATCAAAATTATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGAAAGTTTTCTCCATGGTTTTTAATTTCTGCATTTATTAATTCTGGTACAAAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAAATAACTAAAGCTTTAAAAAACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATACAGATCGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACTTAAGTTCACTTCCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGA-GGAAATCAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                         protein gene; Diptera; Aedes;
                                                                                                                                                                                                                                                                                          (revised)
(first en
                                                                                                                                                                                                                                                         (Diptera) protein gene
                                                                              /product= "insecticidal
620. .1368
/*tag= b
                                                                                                                                                            Location/Qualifiers
                                                                                                                               /*tag= a
                                                                                                                                           .4908
                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                           serovar israelensis
                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                               protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1248
                S
                                            밁
                                                                       δ
                                                                                                             В
                                                                                                                                   ş
                                                                                                                                                                  멍
                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A plasmid contg. the gene is isolated by forming a gene library from plasmid DNA of B.thuringiensis israelensis (HD 522 strain, USA Goldberg ONR60) followed by screening with anti-israelensis insecticidal protein IG. The insecticidal protein is highly effective against Diptera, esp. Aedes. (Updated on 24-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New insecticidal protein of bacillus tulingensis islaerensis prepd. by isolating plasmid contg. insecticidal protein gene gene library from plasmid deoxyribonucleic acid, etc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4934 BP; 1797 A; 749 C; 877 G; 1511 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Page ?; 9pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19-MAR-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hes 1063;
                                                 4046
                                                                                                               3986
                                                                                                                                                                            3938
                                                                                                                                                                                                                                           3878
                                                                                                                                                                                                                                                                                                           3818
                                                                                                                                                                                                                                                                                                                                                                        3758
                                                                                                                                                                                                                                                                                                                                                                                                                                      3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1988-311968/44.
                                                                                                                                                                                                            476
                                                                                                                                                                                                                                                                         416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   182
                  959
                                                                                                                                                                                                                                                                                                                                         356
                                                                                                                                                                                                                                                                                                                                                                                                      296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 TGAGTCCTATGTTTACAAGTAGTACGAAAAAATACGTTAAAAATAGAAACGACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
 GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAG
                                                 CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                                                                                                                               CATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAATACATTTTATGCAAATCCTATAAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                                                    TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTTGATTTTCATATTTGACACCCG
                                                                                                               CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGATA
                                                                                                                                         TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATA 475
                                                                                                                                                                                                                                                                                                                                                                                                   TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC
                                                                                                                                                                                                                                             TTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC
                                                                                                                                                                                                                                                                                                           CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                        TTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCAAGAAGATGATCCTATTTTTÄÄÄĞGGCÄTTACCTTCÄTÄTGTCTGGGGCGAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                87JP-00066844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAP82589.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    즛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 772.6; DB 1;
Pred. No. 7.3e-163;
0; Mismatches 394;
                                                                                                                                                                            CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT 3985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4934;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   strain -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                            3877
                                                                                                                                                                                                                                                                                                                                                                                                                                       3757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3517
```

4105 655 4045 535

3817

3697

295

3637

121

u

ঠ 밁 8

음 성

문

음 성 음

ঠ 용 र् 뮹 δ 음 성

```
RESULT 11
AAQ81178
ID AAQ81
XX
AC AAQ81
XC AAQ81
                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ち 음 ち
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                               Delta-endotoxin; crystal protein; biological screw-worm; sheep blowfly; Lucilla; Phormia; pesticide; B.t; ss.
  WO9502694-A2
                                            Bacillus thuringiensis
                                                                                                                                                                                                              25-MAR-2003
12-AUG-1995
                                                                                                                                                                                                                                                                                                                      AAQ81178 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                              4886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4106 GGGCATFAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                      toxin PS71M3 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          776
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGAATTAATTTGCATGAACGAGTGATTAATAAAAAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACTTAAGTTCACTTCTTGCGAAGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAGAAGGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAATATTAATAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGAAACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAAACACAACCAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                           (revised)
(first en
                                                                                                                                                                                                                                                                                                                      DNA;
                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                        3543
                                                                                                                                                                                                                                                                                                                        В₽
                                                                                                        control agent; Calliphorid;
Calliphora; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4885
                                            밁
                                                                               Ś
                                                                                                                              밁
                                                                                                                                                           δ
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 1050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A library was constructed from Bacillus thuringiensis PS71M3 total cellular DNA in lambda Gem-11. Plasmid pMYC1625, selected in Escherichia coli, contained a 8.0 kb insert expressing a beta-endotoxin gene. This was sequenced (AAQ81178). A cured, acrystalliferous B.t. host carrying pMYC1625 produced a 130 kDa crystal protein (AAR63078) toxic to calliphorids. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3543 BP; 1278 A; 566 C; 612 G; 1087 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 36-38; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Method for controlling Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hickle LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                P-PSDB; AAR63078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13-JUL-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-JAN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MYCO ) MYCOGEN CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                    2450
                                                                                                                                                                                                                                                                                                                                                                                      2390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2090
                                            2618
                                                                                                                                2570
                                                                                                                                                                                                                  2510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1995-067338/09.
                                                                                                                                                                      476
                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                                                                                                                                            356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236
    596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGTCCTATGTTTACAAGTAGTAGGAAAAATACGTTAAAAATAGAAAACGACAGATTATG
    TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG 655
                                                                                                                                                                                                                                      TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATA
                                                                                                                                                                                                                                                                                                                               CATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAATACATTTATGCAAATCCTATAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                            CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTCGTATTCATGCCAATATGATA
                                                                                                                                                                          TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC
                                                                                                                                                                                                                                                                                                  CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                      TTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                 TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAAGAAGATGATCCTATTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                      TGTATCCTTCTAC-------CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Payne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93US-00093199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94WO-US007902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             45.3%;
71.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Calliphoridae pests - specifically utilises isolates or toxins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 763.8; DB 2;
Pred. No. 6.4e-161;
0; Mismatches 387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
```

24;

Gaps

w

61

121 2149

475

415 2449 2389 295 2329 235 2269 181 2209

355

535 2569

595 2617

```
RESULT 12
AAQ14669
ID AAQ14
XX AAQ14
AC AAQ14
XX 27-AU
DT 25-MA
DT 04-FE
XX Dipte
XX Dipte
XX Dipte
XX Dipte
XX Dipte
XX Dipte
XX Insec
                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ર્
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                         27-AUG-2003
25-MAR-2003
04-FEB-1992
 Insecticide;
                            Dipteran active toxin gene
                                                                                                                  AAQ14669;
                                                                                                                                               AAQ14669
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            776
                                                                                                                                               standard; DNA;
                                                                                                                                                                                                                                                                                                                                                         CACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAG
                                                                                                                                                                                                                                                                                         GAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                      TTGAATTAATTTGCATGAACG
                                                                                                                                                                                                                                              TCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                    AATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGTATTGTAATGGAAAGCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGAAACAACAAGCATATGATGTAGCGAAACAAGCCATTAATGCTTTATTCACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACTGTCACGCGTGAAACACATGGAGAAGAAGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                                                                                                                                                                                                                                             AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTATCTCAMATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCAC 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAG
B.t; crystal; delta endotoxin; cryIVA;
                                                       (revised)
(revised)
(first en
                                                         entry)
                                                                                                                                             3543
                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3157
                                                                                                                                                                                                                                                                                                                                    3457
                                                                                                                                                                                                                                                                                                                                                                                             3397
                                                                                                                                                                                                                                                                                                                                                                                                                        1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                     3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2737
```

```
B
                            5
                                                             문
                                                                                       S
                                                                                                                     밁
                                                                                                                                                5
                                                                                                                                                                                   В
                                                                                                                                                                                                         S
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 1049;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The sequence was obtd. from plasmid pMYC1625 which was isolated from a genomic library prepd. from DNA from B.t. PS71M3 [from B.t. PS71M3-69] (NRRL B-18515)]. It is related to the cryIVA family of genes, the 140 kD endotoxin gene and the type II gene from B.t. var. israelensis. The gene encodes a 130 kD protein. Microorganisms transformed with the DNA may be administered to dipteran insects or their environments, the expressed toxins acting as an insecticide. See also AAQ14670-Q14672. (Updated on 25 MAR 2003 to correct PA field.) (Updated on 27-AUG-2003 to correct OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3543 BP; 1278 A; 567 C; 612 G; 1086 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus thuringiensis genes encoding diptera-active toxins - and transformed microbes used to control insects in various environments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1991-341902/47.
P-PSDB; AAR14373.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 10; 20pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-MAY-1990;
01-OCT-1990;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-NOV-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus thuringiensis serovar morrisoni.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (MYCO ) MYCOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
   2450
                                                               2390
                                                                                                                        2330
                                                                                                                                                                                    2270
                                                                                                                                                                                                                                                 2210
                                                                                                                                                                                                                                                                                                           2150
                                                                                                                                                                                                                                                                                                                                                                        2090
                               356
                                                                                                                                                                                                                   182
                                                                                            296
                                                                                                                                                      236
                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                                        AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA 121
   CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                   CATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGG 415
                                                             TTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAAC 2449
                                                                               TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC 355
                                                                                                                          TTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGGCGAGAGAAA
                                                                                                                                           TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACA
                                                                                                                                                                                                                                                 AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                            TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                                                                                                                                            TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA
                                                                                                                                                                                                                                                                                                           ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                 TGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                      TTAATACATTTATGCAAATCCTATAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                 45.2%;
ilarity 71.8%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90US-00524255.
90US-00590903.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91EP-00304180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .3543
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 762.2;
Pred. No. 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                 ed. No. 1.5e-160;
Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                           2389
   2509
                                                                                                                                                         295
                                                                                                                                                                                        2329
                                                                                                                                                                                                                                                 2269
                                                                                                                                                                                                                                                                                                             2209
                                                                                                                                                                                                                    235
                                                                                                                                                                                                                                                                                                                                                                        2149
                                                                                                                                                                                                                                                                                                                                                                                                      61
```

δ

TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTTGGCCTATA 475

```
3518
                                                                                                                                                                                                                                                                                                                                                            3278
                                                                                                                                                                                                                                                                                                                                                                                                      1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                   3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC
                                                                                                                CACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATGATGCAC 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAAACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recaecciaarectreareregaeatrarecereregaarearectereagrareregaece
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC
                       TCGAGTTGCTTTGTATGCAAG 1450
                                                                                    ATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGCA
                                                                                                                                                                           AATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                                                     <u>AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAAA</u>
                                                                                                                                                                                                                                                                                                 AAAAAGAAGGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAAGCAGGAAA
                                                                                                                                                                                                                                                                                                                                                            GCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                    GGGTATCTCAAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCAGACGTACAACAAATAGATGGTGTTTCTGTATTGGTTCTAATTGGAGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGACATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGAAACACAACCAAGCATATGATGTAGCGAAACAAGCCATTAATGCTTTATTCACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTGTCACGCGTGAAACACATGGAGAAGGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATTGGCACATGTGAAACAAAAGGAAAAGAAATTGGAAACAACACATGGAGAAAAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTCGTATTCATGCCAATATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTATCCTTCTAC----C-CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT
                                                                                                                                 1429
                                                                                                                                                                                                                                                                3397
                                                                                                                                                                                                                                                                                                               1309
                                                                                                                                                                                                                                                                                                                                                                                                      1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      535
                                                                                    3517
                                                                                                                                                                           3457
                                                                                                                                                                                                                      1369
                                                                                                                                                                                                                                                                                                                                                            3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      775
```

र्ठ

밁 श् 밁 δ 밁 5 밁 5 뭐 S 밁 र् ₽ ঠ 당 Ş 밁 5 밁 S 吊

8 8 8 8 8 8 8 8 8 8 8 8 8

밁

RESULT 13

```
AAN60055

AAN60055

AC AAN6

XX AAN6

XX YAN6

DT 25-N

DT 07-J

XX VB13

DE enco

XX Inse

YI Prom

YI Inse

Y
                                                                                   á
                                                                                                                                                                       Ś
S
                                           밁
                                                                                                                                     밁
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                         Matches 1081;
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                          The patentors claim a toxic protein having an amino portion identical the amino portion of delta-endotoxin from Bacillus thuringienals var. israelensis and a carboxy-terminus portion different from the carboxy portion of the delta-endotoxin. The protein has the toxic properties of the delta-endotoxin. Appln. is at 0.2-10 x (10 to the 9) I.U./acre. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 10974 BP; 3554 A; 2038 C; 1772 G; 3610 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 7; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Insecticidal protein related to bacterial delta-endotoxin -recombinant DNA methods from transform microorganism.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P-PSDB; AAP60051.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1986-253299/39.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sekar VS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-1985;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27-FEB-1986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-SEP-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP195285-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VB131 clone circular plasmid from Bacillus thuringiensis var.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-MAR-2003
07-JUL-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAN60055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAN60055 standard; DNA; 10974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UYGE-) UNIV
                                               4992
                                                                                                                                                                                                                                   4872
                                                                                                                                        4932
                                                                                          121
  181
                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                              μ
                                                                                                                                                                                     GANATAGATCAAGCGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                            CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                               AAAATGCTCTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                        GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGGAATTATATCCAAAGAA
                                                                                                                                                                                                                                   GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein related to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Carlton
                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GEORGIA RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                microbial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85US-00706836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86EP-00102547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2854.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product= "toxin"
/note= "claimed DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BD
                                                                                                                                                                                                                                                                                                                                              42.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 2894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                                         ,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bacterial delta endotoxin.
                                                                                                                                                                                                                                                                                                                                              Score 708.2; DB 1;
Pred. No. 2.3e-148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВÞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INC
                                                                                                                                                                                                                                                                                                                           Mismatches 468;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            So
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                 0
U;
                                                                                                                                                                                                                                                                                                                                                                                                                    0 Other;
                                                                                                                                                                                                                                                                                                                                                                         10974;
                                                                                                                                                                                                                                                                                                                         32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                obtd. by
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O.F
                                                  5051
                                                                                                                                          4991
                                                                                                                                                                                        120
                                                                                                                                                                                                                                   4931
    234
                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
```

```
1249
                                                                                                                                                                                                                                                                                                                                                                                                                 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                5817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           295
AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATG-GAAAGCAGGA
                                                                                                      GGGGTATCTCAAAACCTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATTGGCACATGTGAAACAAAAGGAAAAGAAATTGGAAACAACACATGGAGAAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAC
                                                                                                                                                                                                    AATGCCGCGGTACAAATAGATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                 CGAAATGTCATAACAAATGGTGACTTTACACAAAGGATTACAGGGATGGCACGCAACAGGA
                                                                                                                                                                                                                                                                                                                                                                                                         TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACTGPCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAAGAGGGCCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCATTAGATACAAATGAAAATATAGGGGGTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCGTATCTCAAATGTCCATCTCCAACTATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                       AGAAATATTATTAAAAATGTTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                  TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCCGCTGTGCCGCTAACATTTGGGACACTTCTGATATGTTGTATTCATGCCAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTATCCTTCTACCTTTGATTGTGA------AGGGCTAATCGTTGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAACACGTTACGGGAAAGAAATTGATGATGCTATCATGAATGTTCCAAATGATTTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                                                                                                                                                                                                                                                                                                                                                              1068
                                                                                                                                                                                                                                                                   5996
                                                                                                                                                                                                                                                                                                                  1128
                                                                                                                                                                                                                                                                                                                                                                    5936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                5876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5111
                                                                        6116
                                                                                                                       1248
                                                                                                                                                                       6056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           354
```

8 8 8

8 8 8 8

8 8 8 8 8 8 8

중 유

8 8 8 8 8 8

8 8 8

8 8 8 8

유 성 유

```
ARAN93059
ID 9A099
ID 9A099
ID 9A099
AC AAN93
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              음 성 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27-AUG-2003
25-MAR-2003
30-MAY-1990
The sequence encodes the 130 kDa delta-endotoxin gene from B. thuringiensis subsp. israelensisis and is a 4.46 kb insert of pCi delta endotoxin protein is insecticidal and can be used to contropests esp. mosquitos. See also AAN93054. (Updated on 25-MAR-2003
                                                                                                                                                         DNA fragment encoding insecticidal protein - obtd. thuringiensis sub species israelensis, and used in plant cells.
                                                                                                                                                                                                                                                                                                                Ellar DJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EP296870-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Delta-endotoxin crystal protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAN93059;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAN93059
                                                                                                                                                                                                                                                                                                                                                                                                       26-JUN-1987;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-JUN-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-DEC-1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Delta-endotoxin;
                                                                                                                                                                                                                                                                                                                                                            ( DUPO )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6117
                                                                                                                                                                                                                                                1989-001322/01
DB; AAP93715.
                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thuringiensis; israelensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAATATATAGAAAACATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCATTGAAGTTAATTTGCATGAACGAGTGATTAATAAAAAATACCTAAAGCTTATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAACCTGCACACGGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATACAGCATTCGTGTCACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAGTGATCGTGT---ACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAATTAGCGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCC 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGGTATACAAACAACTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACACTGGAGAAAGTTTTCTCCATGGTTTTTAATTTCTGCATTTATTAATTTCTGGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGGA
                                                                                                                                                                                                                                                                                                                                                            PONT
                                                                                                                                                                                                                                                                                                                   Ward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  toxin; crystal protein; insecticide; pCH130; control agent.
                                                                                                              Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (revised)
(revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                       87US-00067653
                                                                                                                                                                                                                                                                                                                                                                                                                                                   88EP-00305772
                                                                                                                7;
                                                                                                                                                                                                                                                                                                                ES;
                                                                                                                                                                                                                                                                                                                                                            DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             891. .4430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /*tag= b
/label= Shine-Dalgarno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                              26pp;
                                                                                                                                                                                                                                                                                                                                                            NEMOURS &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4571
                                                                                                              English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "delta-endotoxin
                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                              Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   crystal
                                                                                                                                                                              from Bacillus
microorganisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98;
                                                                                                                                                                                                  Bacillus
                         of pCH1
                           pCH130. The ntrol insect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6295
```

밁

```
8
                                               ち 음 성
                                                                                                                                   밁
                                                                                                                                                          5
                                                                                                                                                                                      B
                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                           ঠ 유
                                                                                                                                                                                                                                                                                                                                   ঠ 🖁 ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                    음 중 음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SXS
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 37.8%; Score 637.8; DB 1; Best Local Similarity 66.2%; Pred. No. 1.1e-132; Matches 1060; Conservative 0; Mismatches 397;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    correct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 4571 Bp; 1678 A; 685 C; 817 G; 1391 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                          3628
                                                                                                                                                                                                                                                                                                                                                                                                                                 3460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3160
                                                                                                                                                                                                  3688
                                                                                                                                                                                                                                                                                                               3568
                                                                                                                                                                                                                                                                                                                                                                        3508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3040 ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2980 TTAATACATTTTATGCAAATCCTATAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                                                                    3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               296
                                                                                                                                                                                                                                                                                   656
                                                                                                                                                                                                                                                                                                                                                                                                    536
                                                                                                                                                                                                                                                                                                                                                                                                                                                          476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        236
  836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 TGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAAACGACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PA field.) (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGGCACGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATATACACGTTATCGAGTAAGAGGGTTTGGTGGGAAGTAGTAAAGATTTGAAATTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                              TAACACGTTACGGGAAAGAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATA 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA
  GGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG
                              CACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                         CATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTT
                                                                                    CGGAAACACAACAAGCATATGATGTAGCGAAAATTGAAGAAGGGCCAATAGATGGGGAAG
                                                                                                                                            CACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                                                                  ATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAAG 374
                                                                                                                                                                                                                    GGGCATTAGATACAAATGAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                                                                                                                           GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAG
                                                                                                                                                                                                                                                                                                                 CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                                                                                                                                 TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG
                                                                                                                                                                                                                                                                                                                                                                        CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                 ----CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT
                                                                                                    -----CATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 4571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                         3567
                                                                                                                                                                                                                                                                                                                                                                                                    595
                                                                                                                                                                                                                                                                                                                                                                                                                                 3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                            535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3039
  895
                              3927
                                                           835
                                                                                                                                            3807
                                                                                                                                                                                                                                                                                     715
                                                                                                                                                                                                                                                                                                                 3627
                                                                                                                                                                                                                                                                                                                                             655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
```

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

```
4468
                                                                                                                                                         4408
                                                                                                                                                                                                                                        4348
                                                                                                                                                                                                                                                                                                                     4288
                                                                                                                                                                                                                                                                                                                                                                                                    4228
                                                                                                                                                                                                                                                                                                                                                                                                                                           1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4048
                                                                                                                    1370
                                                                                                                                                                                                   1310
                                                                                                                                                                                                                                                                               1250
                                                                                                                                                                                                                                                                                                                                                            1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3988 TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3928 CGGAAACACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  896 AACAAGAG-----TTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC
TCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC 1470
                                                                                                                                                                                CACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                    ATGCAGACGTACAACAATAGATGGTGTTTCTGTATTGGTTCTAATTGGAGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT
                                                                                               AATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                          AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGGGAGGAGAATCAAGAAA
                                                                                                                                                                                                                                                                 AAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAA 1309
                                                                                                                                                                                                                                                                                                                       GCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTAGGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                GGGTATCTCAAAACTTGCATGCTCAAGATCATGGATATGTGTTACGTGTGATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCCGCGGTACAACAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAATT
                                                                              ATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATATAA
                                                                                                                                                                                                                                                                                                                                                                1249
                                                                                                                                                                                                                                                                                                                                                                                                                                           1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      949
                                                                                                                                                                                                     1369
                                                                                                                                                                                                                                            4407
                                                                                                                                                                                                                                                                                                                         4347
                                                                                                                                                                                                                                                                                                                                                                                                        4287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4107
                                                                                                                                                               4467
```

8 8 8 8 8 8

```
RESULT 15
AAN93054
ID AAN93
XX AAN93
XX AAN93
XX 27-AU
DT 27-AU
DT 30-MA
DT 30-MA
DT 30-MA
CX Delta
XX Delta
XX Delta
XX Delta
XX Bacil
XX Bacil
XX EFT CDS
FT CDS
                                                                                                                                                                                                                                                                                                 27-AUG-2003
25-MAR-2003
30-MAY-1990
                                                                                                                                                                                            Bacillus thuringiensis; israelensis
                                                                                                                                                                                                                      Delta-endotoxin; crystal protein; insecticide; ss; pCC130; biological control agent.
                                                                                                                                                                                                                                                                                                                                                             AAN93054;
                                                                                                                                                                                                                                                                                                                                                                                         AAN93054 standard; DNA; 3940
                 28-DEC-1988.
                                             EP296870-A.
                                                                                                                                                                                                                                                                   Delta-endotoxin crystal protein gene
                                                                                                                                                                                                                                                                                               (revised)
(revised)
(first entry)
                                                                                                                                                879. .884
                                                                                                                                                              Location/Qualifiers
                                                                                                                 /*tag= b
/label= Shine-Delgarno
                                                                         /product= "delta-endotoxin"
                                                                                                                                                                                                                                                                                                                                                                                           ₽₽
                                                                                                                    sequence
```

```
Query Match
Best Local Similarity
Matches 670; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The nucleotide sequence is an insert in plasmid pCC130. The delta endotoxin protein is insecticidal and can be used to control insect peesp, mosquitos. See also AAN93059. (Updated on 25-MAR-2003 to correct field.) (Updated on 27-AUG-2003 to correct OS field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3940 BP; 1457 A; 603 C; 659 G; 1221 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 5; 26pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plant cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA fragment encoding insecticidal protein - obtd. from Bacillus thuringiensis sub species israelensis, and used in microorganisms and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1989-001322/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ellar DJ, Ward ES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (DUPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-JUN-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2980
                                                                                                                                                                                                                                                                                                                               476
                                                                                                                                                                                                                                                                                                                                                                                                                                         416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAP94035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DU PONT DE NEMOURS &
GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAG 715
                                                      CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                      TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG 655
                                                                                                                                                                                                  TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATA 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGATATAAGATTTGAAATTAATGG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACA 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA 121
                                                                                                                                                               CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTTATTCATGCCAATATGATA 3567
                                                                                                                                                                                                                                                                                                                          TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC 535
                                                                                                                                                                                                                                                                                                                                                                                      TTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC 3459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAAC 3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAATACATTTTATGCAAATCCTATAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                                                                                                                                                                                                                                                         TGTATCCTTCTACCTTTGAT-----TGTGAAGGGTCTAATCGTTGAGACGT 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGACA 3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA 3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87US-00067653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            88EP-00305772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26.6%;
68.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 448.6; DB 1; Length 3940; Pred. No. 2.3e-90; O; Mismatches 279; Indels 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pests
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
```

5 B 5

8 8 8 8 8

밁

유

B & B & B & B & B & B & B

ક В S 멍 δ 밁 S 밁 Ś 밁 3928 3868 3808 3748 3688 3628 836 950 968 776 AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC 949 ATGGATACGCATCATTAGATATTTAGAAGTAATTGAAGAAGGCCCAATAGATGGGGAAG GGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCAG TÁCAAGATGAGGCTTTACAGTTTGATACGÁCACTCGCTCAAATTCAGTACGCTGAGTATT 3927 CGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAATG GGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG 895 CATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAAACGTT 835 ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG CACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGTT TGGTACAGTCGAT 962 3807 3747 775 3687 3867

Search completed: February 15, 2006, 03:49:03 Job time : 1069 secs

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic - nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   1686
914.2
783.2
384.2
384.2
387.9
379
379
313
313
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
312.8
                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq
                                                                                                                                                                                                                                                                                                                                                                           Published_Applications_NA_Main:*

1: /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*

2: /cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*

3: /cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*

4: /cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*

5: /cgn2_6/ptodata/1/pubpna/US10A_PUBCOMB.seq:*

6: /cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*

6: /cgn2_6/ptodata/1/pubpna/US10E_PUBCOMB.seq:*

7: /cgn2_6/ptodata/1/pubpna/US10E_PUBCOMB.seq:*

9: /cgn2_6/ptodata/1/pubpna/US10E_PUBCOMB.seq:*

9: /cgn2_6/ptodata/1/pubpna/US10E_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                1987654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-781-979-6
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          February 15, 2006, 03:49:14; Search time 1453 Seconds
(without alignments)
9595.438 Million cell updat
    1000.0

546.5

222.8

222.8

222.5

222.5

18.6

18.6

18.6

17.9

17.9

17.9

17.9

17.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9793542 segs, 4134689005 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Maximum Match 100%
Listing first 45 su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gtgagtcctatgtttacaag.....atcaaggatataaccgttaa 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyright
                                                                                                                                                                                                                                                                          Length
  GenCore version (c) 1993 - 2006
                                                                                                                                                                                                                                                                            BB
    76510
                                                                                        US-10-781-979-6
US-10-781-979-1
US-10-929-754-2
US-10-929-754-3
0 US-11-091-654-3
US-10-089-678-3
US-10-089-678-3
US-10-345-020-3
US-10-345-020-3
US-10-345-020-3
US-10-120-544A-19
0 US-11-091-654-17
                                   US-10-032-717-1
US-10-414-637-1
US-10-606-320-1
US-10-746-914-1
US-11-021-115-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sw model
                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.1.7
Biocceleration Ltd
Sequence 6, Appli
Sequence 4, Appli
Sequence 4, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 19, Appli
Sequence 19, Appli
Sequence 17, Appl
Sequence 17, Appl
Sequence 17, Appli
Sequence 1, Appli
Sequence 3, Appli
                                                                                                                                                                                                                                                                           Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell updates/sec
                                                        Ś
                                                                                                  ક
                                    밁
                                                                                뭉
                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-781-979-6
```

. 45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
262.4	265.8	268.8	268.8	269	269.6	271.8	275.2	299.2	299.2	299.2	302.4	302.4	302.6	302.6	302.6	302.6	302.6	302.6	302.6	302.6	302.6
15.6	15.8	15.9	15.9	16.0	16.0	16.1	16.3	17.7	17.7	17.7	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
3459	3504	3471	3471	4344	3453	3507	3465	6930	6930	6930	4188	4188	6613	6613	6613	6613	4874	4874	4874	4874	3633
7	σ	σ	ហ	9	ທ	7	10	σ	σ	ω	10	ഗ	œ	7	σ	ரு	æ	7	თ	ຜ	œ
US-10-614-524-5	US-10-428-961-39	US-10-428-961-27	US-10-099-285-73	US-10-687-879A-4	US-10-099-285-75	US-10-614-524-3	US-11-018-615-26	US-10-342-821-1	US-10-345-020-1	US-09-756-526A-1	US-11-091-654-5	US-10-120-544A-5	US-10-746-914-18	US-10-606-320-18	US-10-414-637-28	US-10-032-717-28	US-10-746-914-17	US-10-606-320-17	US-10-414-637-27	US-10-032-717-27	US-10-746-914-3
Sequence 5, Appli	Sequence 39, Appl	Seguence 27, Appl	Sequence 73, Appl	Sequence 4, Appli	Sequence 75, Appl	Sequence 3, Appli	Sequence 26, Appl	Sequence 1, Appli	Sequence 1, Appli	Sequence 1, Appli	Sequence 5, Appli	Sequence 5, Appli	Sequence 18, Appl	Sequence 18, Appl	Sequence 28, Appl	Sequence 28, Appl	Sequence 17, Appl	Sequence 17, Appl	Sequence 27, Appl		Sequence 3, Appli

ALIGNMENTS

```
Sequence 6, Application US/10781979

Sequence 6, Application US20040250311A1

GENERAL INFORMATION:

APPLICANT: Carozzi, Nadine
APPLICANT: Hargiss, Tracy
APPLICANT: Koziel, Michael G.
APPLICANT: Koziel, Michael G.
APPLICANT: Carr, Brian

TITLE OF INVENTION: AXMI-008, A Delta-Endotoxin Gene and
TITLE OF INVENTION: Methods for Its Use
FILE REFERENCE: 045600/274147

CURRENT APPLICATION NUMBER: US/10/781,979

CURRENT FILING DATE: 2004-02-20

PRIOR APPLICATION NUMBER: 60/448,797

PRIOR APPLICATION NUMBER: 60/448,797

PRIOR PRIOR DATE: 2003-02-20

NUMBER OF SEQ ID NOS: 28

SOFTWARE: FASTSEQ for Windows Version 4.0

SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA; ORGANISM: Bacillus thuringiensis; FEATURE: ; NAME/KEY: CDS; LOCATION: (1)...(1686)
                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 1686; Best Local Similarity 100.0%; Pred. No. 0; Matches 1686; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 1686
                        181
                                                                   121
                                                                                                                                                       61
                                                                                                                                                                              61 GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                               1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGACTAT
CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                   GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                        GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                 멂
                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                       8;
                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                     Length 1686;
                                                                                                                                                                                                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                            Gaps
                                                                   180
                                                                                                                                                         120
                        240
                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                      60
```

```
1141
                              1261
                                                                                                                                                                                                                                                                                                              1021
                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                                                                                                                                                                                   901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                  CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                  CCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                               ACAAATGGTGACTTTACACAAGGATTACAAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140
                                                                                                                                                                                                                                                                                               CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                                  ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACATGTGAAAACAAAAAGGAAAAGGAAATGGAAAACAACACATGGAAGAAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTTGATTTTCATATTTGACACCCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACTCTATTTCCAACCTATATCTGTCAAAAAATGAGTCTAAATTAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTGGAAAAGGGTATGTAACGATGGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTC
                                                                                                                                                                                                                                                                           CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTCATATTGACACCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACGTTATCGAGTAAGAGGGTTTGGGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                   1260
                                                                                                                                                                                                                                                                                                              1080
                                                                                                                                                                                                                                                                                                                                                                                  1020
                            1320
                                                                 1260
                                                                                                                                                                                                      1140
                                                                                                                                                                                                                                                                           1080
                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                   960
                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
```

á

음 성 음

중 유

Ś

유 성 유

8 8 8 8 8 8 8 8 8 8

8 8 8 8 8 8

중 유

S

유 성 유

8 8 8 8

```
APPLICANT: Carozzi, Nadine
APPLICANT: Hargiss, Tracy
APPLICANT: Hargiss, Tracy
APPLICANT: Moziel, Michael G.
APPLICANT: Duck, Nichael G.
APPLICANT: Duck, Nichael B.
APPLICANT: Carr, Brian
TITLE OF INVENTION: Methods for Its Use
FILE REFERENCE: 045500/274147
CURRENT APPLICATION NUMBER: US/10/781,979
CURRENT APPLICATION NUMBER: US/10/781,979
FRIOR APPLICATION NUMBER: 60/448,797
PRIOR APPLICATION NUMBER: 60/448,797
PRIOR FILING DATE: 2003-02-20
NUMBER OF SEQ ID NOS: 28
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                 ; SEQ ID NO 1
, LENGTH: 5980
; TYPE: DNA
; ORGANISM: Bacillus thuringiensis
US-10-781-979-1
             δ
                                       ğ
                                                           S
                                                                                          뭐
                                                                                                           δ
                                                                                                                                          밁
                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
US-10-781-979-1
                                                                                                                                                                                              Query Match
Best Local S
Matches 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/10781979 Publication No. US20040250311A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                              atch 100.0%; Score 1686; cal Similarity 100.0%; Pred. No. 0; 1686; Conservative 0; Mismatches
                181
                                                                  121
                                                                                                                   61
                                                                                                                                          GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA
                                                                                                           GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                        GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATCTAACAATGATGACCTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT
                                         CGTTAA 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACCTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1686
                                                                                                                                                                                                                          DB
                                                                                                                                                                                                0
                                                                                                                                                                                                                         8
                                                                                                                                                                                                Indels
                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                          5980;
                                                                                                                                                                                               0
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                 240
                                         2488
                                                                                             2428
                                                                                                                                             2368
                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                  0
```

```
2789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2489
                                                                                                                                                                       3449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2549
3569
                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                              CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGTTAÈACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAA 2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAACCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGA 2548
                                                                                                                                                                                                CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAA 1200
                                                                                                                                                                                                                                                                                      ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA 1140
                                                                                                                                                                                                                                                                                                                                                 CAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAAGCATGTGAAGTGTCACGATCGTCATCTATTGATTTTCATATTGACACCGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAG 480
                        CCTGGAAAAGGGTATGTAACGATGATGGATGGAAAGCAGGAAAACACTTAAGTTC
                                                                                                          AACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGA
                                                                                                                                                                       CAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAA
                                                                                                                                                                                                                                                             ACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATAT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAA
                                                                                      AACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               660
                                                                                                                                                                                                                                                                                                                                                   . 3388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2608
                                                                                                                                 1260
                                                                                                                                                                                                                                                             3448
                                                                                                                                                                                                                                                                                                                                                                                                                                       3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3088
                                           1320
                                                                                      3568
                                                                                                                                                                       3508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
```

유

유 성

청 음 청

밁

밁

8 8 8 8 8 8

ঠ 망 S 밁 5 밁 S 밁 8 밁 S 밁 S 밁 S 밁 र् 밁 ş 밁 S 밁

```
Sequence 4, Application US/10929754

Publication No. US20050124803A1

Publication No. US20050124803A1

GENERAL INFORMATION:
APPLICANT: ABDULLAH, MODH AMIR
APPLICANT: DEAN, DONALD H.
TITLE OF INVENTION: INSECTICIDAL CRYSTAL PROTEINS WITH ENHANCED TOXICITY
FILE REFERENCE: 22727/04179

CURRENT APPLICATION NUMBER: US/10/929,754

CURRENT FILING DATE: 2004-08-30

PRIOR APPLICATION NUMBER: 60/498,826

PRIOR FILING DATE: 2003-08-29

NUMBER OF SEQ ID NO 4

SEQ ID NO 4

LENGTH 4391

TYPE: DNA
ORGANISM: Bacillus thuringiensis

US-10-929-754-4
                                                                                                                             멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                        S
                                                                               밁
                                                                                                   δ
                                                                                                                                                 Ś
                                                                                                                                                                          В
                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-929-754-4
                                   밁
                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 1187; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1321
                                                                                                                                                                              2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1501
              235
                                                                                                                                                       61
ATAGGATCCAATAATCCTATTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                              GTGAATTTTATGCTTACAAGTGGTGCGAAAAATATGTTAAAACTCGAAACGACAGATTAT
                                                                                                                                                                                          GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCGGTTGCACATGTAACCAAGGGCATAACTCTGGCTGTACATGTAATCAAGGATATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATAACCAAGACTCTAGTAATATGTATAATCAAAATTATACTAACAATGATGACGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCCAGAAAGTGATCGT
                                                                                                                               GANATAGATCANATGGCGNATGCTATAGANAATATGTCAGGTGNACAATATTCACAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGTTAA 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAGAAAGTGATCGT
                                      CTCCAAAATGGAGACTT----TTCTGGGAATGATTGGACATTCGGTAATGATATTATC
                                                                                   AAAATGATGCAATGGCATGACATAAAATATGCCAAACAATTGAGTCAAGCACGTAATTTA
                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3994
                                                                                                                                                                                                                                       54.3%;
76.0%;
                                                                                                                                                                                                                          Score 914.8; DB 9;
Pred. No. 6e-197;
0; Mismatches 357;
                                                                                                                                                                                                                             357;
                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                   Length 4391;
                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3748
                                       3038
                                                                                    2978
                                                                                                                                                        120
                                                                                                                                                                               2858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3808
                                                             234
                                                                                                                                                                                                       60
                                                                                                                                   2918
```

```
3876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355
                             GAAACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTATTC
                                                                                                                                                                                                                   GCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATT
                                                                                                                                                                                                                                                                                                           GGAAATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                     GCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACA 1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGAT 1065
GAAACACTTACGTTTACGTCCTGTGACGGAGGATATATGACAAAAACGGTAGAGGTATTC
                                                                                          GCGAAAAAAGAAGGGTCTGGGAAAGGCTATGTAACGAGGATGAGTTGTAATGGTAAGCAG
                                                                                                                                   GCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAG
                                                                                                                                                                                      TCTGGAGTATCTCAAAACCTTCATGTCCAACATCCACATGGATATCTGTTACGTGTGAGT
                                                                                                                                                                                                                                                                                                                                                                          GCACGAAATGTCATAACAAATGGGGATTTTGCACAAGGATTACAAGGGTGGCATGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AACTATGATATATACCAAGAGTTAAACGCGCGTATCATGCAAGCACGCTATTTATACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTTGGTACAGTCGATTCCATATGTACACAATGAGTGGTTACCGGATTTTCCAGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACA----GGAGAAGAGTTAAACTATGATGTTACATTGTCACACATTAAGAACGCCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACAAATGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AMANAGCGCATGGMAACAMAGCGAGTCTATGACCGAGCAMAACAGGCGGTAGATGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGGCGAAGCAGTGACACATGTAAAACAAAAGGAAAAGAAATGGAATCAGCAAATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTAATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGATACGGGGGAAGTAGATTACAATACAAATCTAGGAATTTGGGTTGTTTAAAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTGTACGCCCGGCAAAAAACATGTGGTATGTCATGATTCTCATCAATTCAAGTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGCAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGTÁGGATÁTTATÁATCCÁÁTGCCAGTTTCTCAGCCTTCTTACACATCCGÁTACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCCAAGGGTATCCTACACCAACAGATGGAT-----ATGCTCCCGATATGTATGCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTACCTTCTATGCCGGTCTGTAACGAATTATATGATGGTCAACAACCGTATCCAAATAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCAGCCTAATCCTTCATGT---GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAATGCGTTATGGAAAAATTGATACAGTAATGAATGTACCAAATGACATACCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAACACGTTACGGGAAAGAAATTGATTGCTATCATGAATGTTCCAAATGATTTGGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGTATACGCGTTATCTAGTCAGGGGATTTGTGGGGAAGTAGTAAAGATCTAGAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATATGGAACGATATTCCCAACGTATATATACCAAAAAATTGATGAATCCAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCAGGCAGATAATGCAACTTTTAAAGGGAACTATCTGCATATGTCTGGGGCGAGAGAC
4175
                                         1365
                                                                                                                                     1305
                                                                                                                                                                                                                               1245
                                                                                                                                                                                                                                                                                                                            1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              474
                                                                                       4115
                                                                                                                                                                                      4055
                                                                                                                                                                                                                                                                              3995
                                                                                                                                                                                                                                                                                                                                                                          3935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3098
```

3 B 8 B 8 B

중 유

8 8 8 8

음 중 음

중 유

Ś

음 성 음

ð B

```
RESULT 4

US-10-929-754-2

Sequence 2, Application US/10929754

Publication No. US20050124803A1

GENERAL INFORMATION:
APPLICANT: ABDULLAH, MODH AMIR
APPLICANT: DEAN, DOWALD H.

TITLE OF INVENTION: INSECTICIDAL CRYSTAL PROTEINS WIT FILE REFERENCE: 22727/04179

CURRENT APPLICATION NUMBER: US/10/929,754

CURRENT FILING DATE: 2004-08-30

PRIOR APPLICATION NUMBER: 60/498,826

PRIOR FILING DATE: 2003-08-29

NUMBER OF SEQ ID NOS: 43

SOFTWARE: PatentIn Ver: 3.2

SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; LENGTH: 3684
; TYPE: DNA
; ORGANISM: Bacillus
US-10-929-754-2
                 á
                                                밁
                                                                        ঠ
                                                                                                              밁
                                                                                                                                   Ş
                                                                                                                                                                 밁
                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                2473
                                                                                                              2413
                                                                                                                                                                           2353
                                                                                                                                                                                                                                         2293
                                                                                                                                                                                                                                                                                                     2233
                                                                                                                                                                                                                                                                                                                                                                  2173
                                                                                                                                                                                                                                                                                                                                                                                                                              2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1070;
                     415
                                                                                                                                                                                                                                                                      181
                                                                                                                                            295
                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GTGAGTCCTATGTTTACAAGTAGTAGGAAAAATACGATAAAAATAGAAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                     GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
GTAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTAT 474
                                                                                                                                                                                                                                                                                                                                                                  GACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAATGCACTGTTTACAAATGACGCGAAAGATGCATTAAACATTGGAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGAT 1425
                                                  CCGTATACACGTTACCTAGTAAGGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTG
                                                                    CCATATACACGTTATCGAGTAAGAGGGTTTGTGGGGAAGTAGATATAAAGATTTGAAATTAATG 414
                                                                                                                                    ATATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAA 354
                                                                                                                                                                                             ATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGAC
                                                                                                                                                                                                                                                                    CTCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATC 234
                                                                                                                                                                                                                                                                                                   ABAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ရှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ନ୍ଧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAACATAACCTGCACACGGGTAAT 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGAAAGTGATCGTGTACGAATTGAAATTGGGGAAGCCGAAGGTTCGTTTTATATTGAA 4235
                                                                                                               ATTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAA
                                                                                                                                                                           ATTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGGGGAGAGAC 2412
                                                                                                                                                                                                                                       CTTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACA 2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTATGAGCAAAGTTATAATGGAAATTATAATCAAAATACTAGCGATGTGTATTACCAA 1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCATCGAATTGATTTGTATGAACGGATATACTAGCAATAATAACCAGAATATGAGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       46.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 783.2; DB 9;
Pred. No. 4.2e-167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WITH ENHANCED TOXICITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                   2532
                                                                                                                                                                                                                                                                                                        2292
                                                                                                                                                                                                                                                                                                                                                                    2232
                                                                                                                                                                                                                                                                                                                                                                                                                                2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4295
                                                                                                                 2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
```

Ś 밁 Ś 밁

S 밁 8 밁 ð 밁 S В

В

```
3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2701
                                                                                                                                                                                                                                                                                                                                                              1189
                                                                                                                                                                                                                                                                                                                                                                                                    3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             655
                                                                                                                                                                                                                                                                                                                                                                                                                          AATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGA 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAAT 3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTAT 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAGAAGTAGAATACAAATGTAGGTATTGATGTCTTATTAAAAAATTTCTAATCCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACAGGGAAAAAGCATGTCGTATGTCAGGATTCCCCATCAATTTAGTTTCACTATTGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCTGATTTTCATATTTGACACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTTGTATTCATGCCAATATGAT 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTAT 2592
                                                     ATCGAGTTGCTTTGTATGCAAGGATATGATAACAATAATAAC 1470
                                                                                             GATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGC
                                                                                                                     ACACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCA
                                                                                                                                                                                                                                                                          AAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAA 1308
                                                                                                                                                                                                                                                                                                                                                  GGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAATATTATTAAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAAC 1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACAAGA-----GTTACACTATCATATTACTTTAGATCATATTTCAAAACGCTGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGGAAACACAACAAGCATATGATGTAGCGAAACAAGCCATTGATGCTTTATTCACAAAT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGT 2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGC
                                                                                                                                                                       AAATTGACGTTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCA
                                                                                                                                                                                                                                              AAAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAA
                                                                                                                                                                                                                                                                                                                          GGCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                      TGGGAAACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAT 894
                   ATTGAATTAATTTGCATGAACGAGTGATTAATAAAAAATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACG
                   3582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2880
                                                                                                                                                                                                             1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2640
                                                                                               3540
                                                                                                                                                                       3480
                                                                                                                                                                                                                                                3420
                                                                                                                                                                                                                                                                                                                                                              1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           654
                                                                                                                                   1428
                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                       δ
                                                                                                                                                   밁
                                                                                                                                                                                   δ
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
밁
                                   S
                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-120-544A-3
                                                                                                                                                     2694
                                                                                                                                                                                                                              2634
                                                                                                                                                                                                                                                                                                        2574
                                                                                                                                                                                                                                                                                                                                                                                    2514
                                                                                                                                                                                                                                                                                                                                                                                                                                                               2454
                                                                                                                                                                                                                                                                  277
                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
```

ð

RESULT 5 US-10-120-544A-3

511

밁 ঠ 밁 5 밁 Ş 밁

र्

음 성 음

ક 밁 S B ঠ В ঠ 밁 Ś

```
APPLICANT: KIMURA, Massharu
APPLICANT: NISHHAASHI, Hideji
TITLE OF INVENTION: Polypeptide having larvae growth inhibiting or
TITLE OF INVENTION: Insecticidal effect on scarabaeidae insects and
TITLE OF INVENTION: insecticidal effect on scarabaeidae insects and
TITLE OF INVENTION: poynucleotide encoding the same
FILLE REFERENCE: OP1335
CURRENT APPLICATION NUMBER: US/10/120,544A
CURRENT FILING DATE: 2002-04-12
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR FILING DATE: 2001-04-13
PRIOR FILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 3
LENGTH: 4359
TYPE DNA
ORGANISM: Bacillus popilliae
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Application US/10120544A
Publication No. US20020182693A1
GENERAL INFORMATION:
APPLICANT TANAKA, Masao
APPLICANT: YOKOYAMA, Tomoko
APPLICANT: AOYAGI, Moriichi
APPLICANT: HASEGAWA, Makoto
APPLICANT: HASEGAWA, Makoto
APPLICANT: KIMURA, Masaharu
APPLICANT: KIMURA, Masaharu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 22.8%;
Best Local Similarity 58.0%;
Matches 805; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: CDS
LOCATION: (282)..(4229)
GAATCATCGTC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGATCGATCAAGCCGCCAACGTGGTGGATTGTATATCGGATG---AGTGTGGACATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAACCATTTGTTTACAGATGGATCGAAAAAAGGCGCTAAAAGAAGGCACGACCGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                GATGTACCGGATAATATCCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                                                                                                             AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT
                                                                                                                                                                                                             AAAATAGACGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGT
                                                                                                                                                                                                                                                                                                                  AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA 390
                                                                                                                                                                                                                                                                                                                                                                                        ATGGCGGGTGCGAACGATATTGAGGCCACCAATGATACCTTCCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCGTGGAGCACGAGACATATATGGAAC-----TCTATTTCCAACCTATATCTGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAGTCCGCATGTTACGATCCGTCAAGATAACCCGATTTTTAAAGGCCATTATCTCAGT 2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGAGAATCCATGGAAA
                                                                                                                                                                                  AGCAGCAAAGCTCTAGAGCTGTTGGTTACACGCTATAATGAAGAAGTCGATGCGATTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCAAAATGGAGACTTTTCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches 528;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 384.2; DB 5; Pred. No. 1.8e-76;
----TCAGTATGTGAGCCAAGGGTATCCTACACCAACA 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                2873
                                                                                                                                  510
                                                                                                                                                                                     2813
                                                                                                                                                                                                                                  450
                                                                                                                                                                                                                                                                                     2753
                                                                                                                                                                                                                                                                                                                                                                                          2693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ហ
```

```
; Sequence 3, Application US/11091654
    Publication No. US20050172355A1
    GENERAL INFORMATION:
    APPLICANT: TANAKA, Masao
    APPLICANT: YOKOYAWA, Tomoko
    APPLICANT: HASEGAWA, Makoto
    APPLICANT: HASEGAWA, Makoto
    APPLICANT: HASEGAWA, Makoto
    APPLICANT: KIMURA, Gaku
    APPLICANT: KIMURA, Makoto
    APPLICANT: KIMURA, Makoto
    APPLICANT: NISHIHASHI, Hideji
    TITLE OF INVENTION: insecticidal ef:
                                                                                                                                                                                                   RESULT 6
US-11-091-654-3
                                                                                                                                                                                                                                                                                       ર્
                                                                                                                                                                                                                                                                                                                        유성
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 B 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  중 음 중
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
 CANT: NISHIHASHI, Hideji
OF INVENTION: Polypeptide having larvae growth inhibiting of INVENTION: insecticidal effect on scarabaeidae insects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3054
                                                                                                                                                                                                                                                                                                  1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2874 AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         676
                                                                                                                                                                                                                                                                   GATATAG 3720
                                                                                                                                                                                                                                                                                                  GAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                  GGCAATGTTACCTTCAGTGACTGTGCAAACCATGTCGACAAGCTGAGCTTTACTTCTTGC
                                                                                                                                                                                                                                                                                                                                                        GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                 ATCGAACACCATCGCGGTTATGTATTGCGTGTCACGGCGAGAAAAGAAGATCCGGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCAAGATCATGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCTGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGAGAAATCTGTACTCGTGCTGCCAAATTGGGATGCCAATGTGTCGCAAGATCTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCTTTAGCAATGGGCTTATGTATTGGCAGGCTACCCCGCATGCACGAGTGGAACAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACACTCTCGTTCAGAATGCGTTCTATCTATATGACCAGCGGAATCTGATTAAAAATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGCGGCCAAACACGCGGTGATGGCGTTATTCACAAACACGCGCTATGAAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCCAGCAAAACAGGCTGTAGATGCATTATTACAAA-----TGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGAAAAGAAATGGAGACATCAGAAGGAGCAGCACTGTTCGCAAACGAAACACAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAACACACAACAAGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATTTGGAAGTGATTGAAGAAGGAGCGCTGGGTGTCGAAGCATTAGAACTTGTCAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATTTGGGCATTTGGGTGATCTTCAAAATCTGTGCCACAGATGGTTACGCAAGCTTAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCATCAAGCGCATCAATTTGAGTTCCATATTGATACCGGGACAATCGATCTGGTCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACAGAAAAACACCGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGGATATGCTCCCGATATGTATGCATGCCCGCAAAATATAGAATAGAAAGCATGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCGAAACAACCATCTCCAATATTTTGTATGCTGATCATCTCGTGCAGTCGATTCCTTAT
                                                                                                                                                                                                                                                                                                                                                                  1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3173
                                                                                                                                                                                                                                                                                                                                  3713
                                                                                                                                                                                                                                                                                                                                                                                               3653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FITLE OF INVENTION: poynucleotide encoding the FILE REFERENCE: OP1335
CURRENT APPLICATION NUMBER: US/11/091,654
CURRENT FILING DATE: 2005-03-29
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR FILING DATE: 2001-07-13
PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR FILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 3
LENGTH: 4359
TYPE: DNA
ORGANISM: Bacillus popilliae
                                                 밁
                                                                              á
                                                                                                                 밁
                                                                                                                                                                         밁
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                  δ
                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-11-091-654-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 805;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: CDS
LOCATION: (282
                                                                                                                                                                                                                                                  2814
                                                                                                                                                                                                                                                                                                                   2754
                                                                                                                                                                                                                                                                                                                                                                                 2694
                                                                                                                                                                                                                                                                                                                                                                                                                                                2634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2514
                    676
                                                                                                                                                                                                                511
                                                                                                                                                                                                                                                                                 451
                                                                                                                                                                                                                                                                                                                                                                                                              331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
AATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGG 735
                                                                                                                   CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACAGAAAACACCGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAAGTCCGCATGTTACGATCCGTCAAGATAACCCGGATTTTTAAAGGCCCATTATCTCAGT 263:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (282) . . (4229)
                                                                                                                                                                                                                                                                                                                   AGCAGCAAAGCTCTAGAGCTGTTGGTTACACGCTATAATGAAGAAGTCGATGCGATTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22.8%;
58.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 384.2; DB 1
Pred. No. 1.8e-76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
```

```
0; Mismatches 528;
                 DB 10;
Indels
                Length 4359
54;
```

1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT 60 ū

61 GANATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120 AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGAGAATCCATGGAAA GAGATCGATCAAGCCGCCAACGTGGTGGATTGTATATCGGATG---AGTGTGGACATGAG CTCCAAAATGGAGACTTTTCT----------GGGAATGATTGGACA 2573 2513 2396

ATGGCGGGTGCGAACGATATTGAGGCCACCAATGATACCTTCCCCACGTATGTCTATCAA ATGCGTGGAGCACGAGACATATATGGAAC-----TCTATTTCCAACCTATATCTGTCAA 330 2693

AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA 390 **AAAATAGACGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGT**

GATGTACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT 510

GAATCATCGTC-----TCAGTATGTGAGCCAAGGGTATCCTACACCAACA

AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG 2933 2993

TGTCATCAAGCGCATCAATTTGAGTTCCATATTGATACCGGGACAATCGATCTGGTCGAA TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAATACA

```
Sequence 2, Application US/1008678

Publication No. US20030017967A1

GENERAL INFORMATION:
APPLICANT: ASANO, Shinichiro
TITLE OF INVENTION: PROTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROTEIN, A
TITLE OF INVENTION: NOXIOUS ORGANISM-CONTROLLING AGENT AND METHOD
FILE REFERENCE: Q68821
CURRENT APPLICATION NUMBER: US/10/089,678
CURRENT FILING DATE: 2002-05-02
PRIOR APPLICATION NUMBER: JP 2000-236140
PRIOR FILING DATE: 2000-08-03
PRIOR FILING DATE: 2000-08-03
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 3
SOPTWARE: Patentin version 3.1
SEQ ID NO 2
LENGTH: 3504
TYPE: DNA
ORGANISM: Bacillus thuringiensis
FEATURE:
NAME/KEY: exon
LOCATION: (1)..(3501)
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
US-10-089-678-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
ន
10-089-678-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCGAACACAATCGCGGTTATGTATTGCGTGTCACGGCGAGAAAAGAAGATCCGGGAGCT 3653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGAAGGACCTGGAAAA 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATGAGAAATCTGTACTCGTGCTGCCAAATTGGGATGCCAATGTGTCGCAAGATCTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGGTATCTCAAAAACTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGCTTTAGCAATGGGCTTATGTATTGGCAGGCTACCCCGCATGCACGAGTGGAACAAGAA 3533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACACTCTCGTTCAGAATGCGTTCTATCTATATGACCAGCGGAATCTGATTAAAAATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGT 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAA-----TGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGAAHAGAAATGGAGACATCAGAAGGAGCAGCACTGTTCGCAAACGAAACACAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAAACGTTGGGAAAACACAAGAAGACCTAT 855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTTGGAAGTGATTGAAGAAGGAGCGCTGGGTGTCGAAGCATTAGAACTTGTCAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTTGGGCATTTGGGTGATCTTCAAAATCTGTGCCACAGATGGTTACGCAAGCTTAGAT 3113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCAATGTTACCTTCAGTGACTGTGCAAACCATGTCGACAAGCTGAGCTTTACTTCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATATAATAATATGTACCGGAAGTTCCAGGTATGAATTACGAACTCTATACAGAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCGAAACAACCATCTCCAATATTTTGTATGCTGATCATCTCGTGCAGTCGATTCCTTAT 3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGCGGCCAAACACGCGGTGATGGCGTTATTCACAAACACGCGCTATGAAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3713
                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                             δ
                                                                                     밁
                                                                                                              8
                                                                                                                                                          밁
                                                                                                                                                                                           8
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 22.5%;
Best Local Similarity 56.7%;
Matches 839; Conservative
                                                                                                                                                                                                                                                                                                                                                                                    2683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2182
                 2983
                                                                                                                                                                                                                                                                                                                                                                                                                      670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAAGTGTCACGATCGTCATTTGATTTTCATATTTGACACCGGAGAGAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTTCT
                                             CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                           AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAAAACACAACAA
                                                                                                                                                                                                                                                                                                                                        GTAGGGAATCTAGAAGTCATTGAAGAAGGAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAATCAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACTCCCTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCCAACGTATCTCTATCAACAAATAGATGAATCACTTTTAAAACCATATACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAATGAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAAAGAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTAGTAGAATGCCTATCCGATGAGTTATACCCCAAATGAAAAACGAATGTTATGGGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAAATAATGTTATGGGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTAAAAAAGATGCCTTACAGACAAGTGTAACGGATTATCAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81
                                                                                                                                                                                                                                                                                                             CTAGGAAATCTTGAATTGGTAGAAGAGGGGGCCATTGTCAGGGGAAACATTAGAACGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                           AATACAAATGTAGGTATTGATGTCTTAATAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATATGTCTTCTGATTCCCATGCATTTTCTTTCCATATTGATACAGGTGAAATAGATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APACTAAAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGATTAATGGAGAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGCGGAAGGAGAT
                 CCTTACGTATATATGATGCGTTACCAGAAATCCCTGGAATGAACTATACGAGTTTTACA
                                                                                     CTTAATTCTGGTGTAGAAATGTCAGATATGTTGGCAGCCCAAAAACCTTGTACAGTCCATT
                                                                                                            TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                              GCATATTATGCAGCAAAGCAAAGCCATTGATCGTTTATTCGCAGATTATCAAGACCAAAAA
                                                                                                                                                                                              GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                     CAACAACAAGAACAATGGCAAGACAAAATGGCAAGAAAACGTGGGGCATCAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                    AATGAAAATACAGGAATTTGGGTCGTATTTAAAATTCCGACAACAAATGGATACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTTGTGGTGGGATCGATCGCTGCAGTGAGCAGTATGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---AGACGCGAATTTAGCACTCGAAAACAATGGAGAAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 379; DB 5; Length Pred. No. 2.5e-75; O; Mismatches 555; Indel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87;
                                                                                                                                                                                                                                                                                                                                                                                                                        729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                      2862
                                                                                                                                                                                                                                                                                                               2802
                                                                                                                                                                                                                                                                                                                                                                                      2742
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2121
                                                                                                                            963
                                                                                                                                                                                                  909
                                                                                                                                                                                                                                                                           849
                                                                                                                                                                                                                                                                                                                                                 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               429
```

```
Sequence 3, Application US/10089678

Publication No. US20030017967A1

GENERAL INFORMATION:
APPLICANT: ASANO, SHANICHICO
TITLE OF INVENTION: PROTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROT:
TITLE REFERENCE; Q68821
CURRENT APPLICATION NUMBER: US/10/089,678
CURRENT FILING DATE: 2002-05-02
PRIOR APPLICATION NUMBER: JP 2000-236140
PRIOR FILING DATE: 2000-08-03
PRIOR FILING DATE: 2001-08-03
PRIOR APPLICATION NUMBER: PCT/JP01/06660
PRIOR APPLICATION NUMBER: PCT/JP01/06660
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 3
SOFTWARE: Patentin version 3.1
SEQ ID NO 3
LENGTH: 3600
 Ś
                                    밁
                                                               S
                                                                                                      밁
                                                                                                                                 ঠ
                                                                                                                                                              뫄
                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            음 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                 LENGTH: 3690
; TYPE: DNA
; ORGANISM: Bacillus
US-10-089-678-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 8
US-10-089-678-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ક
                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3103
                                                                                                                                                                           2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1204
                                                                                                                                                                                                                                              839;
     202
                                                                                                                                                                                                             22
   GGGAATGAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                    ATAMAAGTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT
                                                                                                                            TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAAATAATGTTATGGGATGAA
                                                                                                                                                                           AĞTAAAAAAGATGCCTTACAGACAAGTGTAACGGATTATCAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                          AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                    GTGAAAGAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAAT
                                                                                                        TTAGTAGAATGCCTATCCGATGAGTTATACCCAAATGAAAAACGAATGTTATGGGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATA 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATGTGATGATGATACAGGTGTTTTATCTGCTGATCAAACTAGCTATATCACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTGCGAAGAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACTAAGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGGAGATTTTCGAAATGGATTAAGTGATTGGAATGCAACATCAGATGTGAATGTGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGTTAACAAATAGACTCCAACAAGCATGGAATTTGTATGATCTTCGAAATGCTATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAACATAGAAAGTGTAGAACTCGTGTTAGAAGAAGAGTA 3503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ĠĠĀĠĀĊĠĠĀŦĀŦĠŦĠĀŦĊĀŦĊĊĠŦĠĀŦĠĠŦĠĊĠŖĀŦĊĀĠĀĊĀĠĀĀĀĊĀĊŦĊĀĊĀŤŦŦĀĀŦ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTACAGTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGGAGTA
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                               thuringiensis
                                                                                                                                                                                                                                                              22.5%;
                                                                                                                                                                                                                                        Score 379; DB 5; Length 36 Pred. No. 2.5e-75; O; Mismatches 555; Indels
                                                                                                                                                                                                                                                                              Length 3690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATATATGACAAAAACA
                                                                                                                                                                                                                                            87;
                                                                                                                                                                                                                                            Gaps
                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1083
     249
                                     2427
                                                                    201
                                                                                                        2367
                                                                                                                                                                           2307
                                                                                                                                                                                                             81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROTEIN,
                                                                                   ъ
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                  S
                                                    문
                                                                                                                     문
                                                                                                                                                र्
                                                                                                                                                                                문
                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                   1264
                                                                                                                        3349
                                                                                                                                                         1144
                                                                                                                                                                                         3289
                                                                                                                                                                                                                            1084
                                                                                                                                                                                                                                                                3229
                                                                                                                                                                                                                                                                                                                                   3169
                                                                                                                                                                                                                                                                                                                                                                                                     3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2548
                                                                                                                                                                                                                                                                                                1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2488 GTTCTGTTTANAGATCGTTCGCTTCGTTTGACAAGTGCGAGAGAGAGTTGATACAGAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2428 AGGATTAATGGAGAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGCGGAAGGAGAT 2487
                                                                                                                                                                                                                                                                                                                                                                                                                                      910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      370
GGAAAAGGGTATGTAACGATGATGGATGGTAATGGAAAGCAGGAAACACTTAAGTTCACT 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                        TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT 1263
                                                                                                                                                CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                        AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                           GAGTTAAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                      TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACAACAAGAACAACAATGGCAAGACAAAATGGCAAGAAAACGTGGGGCATCAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTAGGGAATCTAGAAGTAGTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATATGTCTTCTGATTCCCATGCATTTTCTTTCCATATTGATACAGGTGAAATAGATTTG 2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAAGTGTCACGATCGTCATTTGATTTTCATATTTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAATCAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACTCCCTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACTAAAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTCCAACCTATATCTGTCAAAAAATAGAGTGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                        CAACTAAGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAA
                                                                                                                                                                                           AATGGAGATTTTCGAAATGGATTAAGTGATTGGAATGCAACATCAGATGTGAATGTGCAA
                                                                                                                                                                                                                                                              GAGTTAACAAATAGACTCCAACAAGCATGGAATTTGTATGATCTTCGAAATGCTATACCA 3288
                                                                                                                                                                                                                                                                                                                                                                   CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                       CTTAATTCTGGTGTAGAAATGTCAGATATGTTGGCAGCCCAAAACCTTGTACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATATTATGCAGCAAAGCAAAGCCATTGATCGTTTATTCGCAGATTATCAAGACCAAAAA 3106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAGGAAATCTTGAATTGGTAGAAGAGGGGCCATTGTCAGGGGAAACATTAGAACGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGAAAATACAGGAATTTGGGTCGTATTTAAAATTCCGACAACAATGGATACGCAACA 2928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCCAACGTATCTATCAACAAATAGATGAATCACTTTTAAAAACCATATACAAGATAT
                                                    TTTACAGTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAAGAGGGAGTA
                                                                                                                                                                                                                                                                                                                                    ĆĊTTACGTATATAATGATGCGTTACĆAGAAATCĆCTGGAATGAACTATACGAGTTTTACA 3228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTGTGGGGGATCGATCGCTGCAGTGAGCAACAGTATGT--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACGCGAATTTAGCACTCGAAAACAATGGAGAAAATGGA 2808
                                                                                                                                                                                                                                                                                                                                                                                                         3168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2547
                                                                                                                          3408
                                                                                                                                                                                             3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2667
```

```
APPLICANT: Igor, Zalunin

APPLICANT: Galina, Chestukhina

TITLE OF INVENTION: NOVEL DELTA-ENDOTOXINS AND

FILE REFERENCE: S-30913A

CURRENT APPLICATION NUMBER: US/09/756,526A

CURRENT FILING DATE: 2001-01-08

FRIOR APPLICATION NUMBER: US 60/175,158

PRIOR APPLICATION NUMBER: US 60/175,158

PRIOR FILING DATE: 2000-01-07

NUMBER OF SEQ ID NOS: 5

SEQ ID NO 3

SEQ ID NO 3

SEQ ID NO 3

LENCTH: A o c c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 9
US-09-756-526A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                S
                                                                                         밁
                                                                                                                      ঠ
                                                                                                                                                               밁
                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Application US/09756526A Patent No. US20020038005A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                               ISSUE: 12
PAGES: 46-48
DATE: 1999-06-18
DATABASE ENTRY DATE:
                                                                                                                                                                                                                                                                                                                 ·09-756-526A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                            PUBLICATION INFORMATION:
AUTHORS: Wojciechowska, et al.
TITLE: Two novel delta-endotoxin ger
TITLE: thuringiensis ssp. finitimus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Jana, Wojciechowska APPLICANT: Evgeny, Lewitin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1129)..(4458)
OTHER INFORMATION: product: Cry28Aal delta-endotoxin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEY: source
LOCATION: (1)..(4896)
OTHER INFORMATION: Bacillus thuringiensis supsp. finitimus strain VKPM B-1161
OTHER INFORMATION: :29337
                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL: FEBS Lett.
VOLUME: 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 4896
TYPE: DNA
ORGANISM: Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                   3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3469
                   3122
                                                                                                                                                                                                    26
                                                                                                                                                                                                                                         609;
                                                                                         TAGAATGTATATCGGACGACCTATATGCAAAGGAAAAATTAAATTTACTCCATGTATTA
                                                                                                                                                             CAACAAACGCTTTGAAAATGGACGTAACTGATTATCACATTGATCAAGTGGCAAACTTAG
                                                                                                                                                                                                    CGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAAGGTACA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTTGCGAAGAAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATGATGTTATGGGATGAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATGTGATGATGATACAGGTGTTTTATCTGCTGATCAAACTAGCTATATCACAAAAACA
                   AATTCGCGAAACAATTGAGTCAAGCACGAAATCTATTATCCGATCCGAATTTTAACAATC 3181
                                                    AACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATA 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGGAATTCACTCCATCTACAGAGCAAGTTTGGÁTTGACATGAGTGÁGACCGAÁGGTGTA 3648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCAACATAGAAAGTGTAGAACTCGTGTTAGAAGAAGAGTA 3689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Evgeny, Lewitin
Ludmila, Revina
                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                         18.6%;
                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                     Score 313; DB 3; I
Pred. No. 2.8e-60;
0; Mismatches 595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   families cry26 and cry28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AND NUCLEIC ACID SEQUENCES CODING THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----GATATATGACAAAAACA 1353
                                                                                                                                                                                                                                                                          Length 4896;
                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                         69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus
                                                                                                                                                                   3061
                                                                                                                              145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (taxor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                   밁
                                                                                                                                        Ś
                                                                                                                                                                                   밁
                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                    Ś
                                                                                                             밁
                                                                                                                                                                                     4061
                                                                                                                                                                                                                                                             4001
                                                                                                                                                                                                                                                                                                                                                                                                             3881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3182
                                                                                                                                                                                                                                                                                                1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAG
AAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTT 1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAACGCTGAAAATAGTTGGACAGCAAATACAGGTGTCACAATCATTGAAGGAGACCCAT 3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----TCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTA 253
                                                                                                                                                                                                                      GTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAA 1147
                                                                                                                                                                                                                                                                                                                                                                                                             GATTTGATACAGAATTCTCCCAATATTTTATCGGCAGATAAACTTGTCTATAAAATTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAGAACAAAATGGGGAAAAAACACAACCCAAAAAAAGGGAAGAAGCTGCAAAATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAAACACAACAAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATTTAGGGATTTGGATTATTTTTAAAATTGCCACACCAGACGGCTATGCAACTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGATCGTTGTAAGCAATCCAATTATGTAAATTCAGCTGCAGATGTAAGGCCTGATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTATCAATCCTTGTGAGGAAATAGAAACACGCTTAGATACTACTTGTGGTGCGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACAGACATTGTAATGAATGTGCCCCGGCGACCTTG---AAATCCTCAGTTACTCTGCCC 3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCAT 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAGAGGATTTGTAGAAGGTAGTCAAGATTTAGAACTCGATTTGGTACGCTACGGG----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAGAGGGTTTGTGGGAAGTAAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAG
                                    ATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCTGGAA 1267
                                                                                                           TCCAGGCACATCCGTGTTGGTACTCTCTAGGCTGGAATGCGCAGGTTGCACAATCTCTAA 4180
                                                                                                                                                TGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGC 1207
                                                                                                                                                                                                                                                           TTGAAAATAGAATTCAGAATGCAATTGATTTATATGACGCTCGCAATACCGTGACAAATG
                                                                                                                                                                                                                                                                                      TAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATG
                                                                                                                                                                                                                                                                                                                                   ATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCAGCTGCAAAGCAAACAATTAATCAATTATTCGCCGATTCACAAGGTACAAAATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAG-----AGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAATCTAGAATTGATAGAATTGGGACCATTATCTGGAGAAGCGTTAGCACAAGTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAATGGAGATCCACACGCATTTTCCATATTGATACAGGTACTACGGATAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTGTCACGATCGTCATCCATTTGATTTCATATTGACACCGGAGAAGTAGATACAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACTTATCTGTACCAAAAAATAGATGAATCCTTATTAAAAACCTTATACACGTTATCAAC 3352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTATAAAGGGCGTGCTATTCAATTATCAGCCGCGAGGGATGAAAA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3880
                                                                                                                                                                                                                                                               4060
                                                                                                                                                                                                                                                                                                1087
                                                                                                                                                                                                                                                                                                                                       4000
                                                                                                                                                                                                                                                                                                                                                                                                             3940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
```

```
NAME/KEY: CDS
LOCATION: (1129)..(4458)
COTHER INFORMATION: product: Cry28Aal delta-endotoxin
PUBLICATION INFORMATION:
AUTHORS: Wojciechowska, et al.
TITLE: Two novel:delta-endotoxin gene families cry26 and cry28 from Bacillus
TITLE: thuringiensis ssp. finitimus
JOURNAL: FEBS Lett.
VOLUME: 453
ISSUE: 12
PAGES: 46-48
PAGES: 46-48
US-10-345-020-3
                               S
                                                                      밁
                                                                                                      S
                                                                                                                                                 밁
                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-10-345-020-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                          Query Match
Best Local S
Matches 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/10345020 Publication No. US20030150018A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Igor, Zalunin
APPLICANT: Galina, Chestukhina
APPLICANT: Galina, Chestukhina
TITLE OP INVENTION: NOVEL DELTA-ENDOTOXINS AND NUCLEIC ACID SEQUENCES CODING THEREFOR
EILE REFERENCE: S-30913B
CURRENT APPLICATION NUMBER: US/10/345,020
CURRENT FILING DATE: 2003-01-15
PRIOR APPLICATION NUMBER: US 60/175,158
PRIOR FILING DATE: 2000-01-07
NUMBER OF SEQ ID NOS: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Jana, Wojciechowska
APPLICANT: Evgeny, Lewitin
APPLICANT: Ludmila, Revina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: PatentIn version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PEATURE:
NAME/KEY: source
LOCATION: (1)..(4896)
OTHER INFORMATION: Bacillus thuringiensis supsp. finitimus strain VKPM B-1161
OTHER INFORMATION: :29337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 4896
TYPE: DNA
ORGANISM: Bacillus thuringiensis
3122
                                                                          3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4301
                                   146
                                                                                                                                                                                                                            809;
                                                                                                              86
                                                                                                                                                                                      26
                                                                                                                                                                                                                                             Similarity
                                                                    TAGAATGTATATCGGACGACCTATATGCAAAGGAAAAAATTTAAATTTACTCCATGTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGCTATGTGACAATCCTTGACTGTGCAAATCATATTGATACGTTGACATTTAGTTCTT
AATTCGCGAAACAATTGAGTCAAGCACGAAATCTATTATCCGATCCGAATTTTAACAATC 3181
                       AACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTT-----
                                                                                                  TAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAA
                                                                                                                                                 CAACAAACGCTTTGAAAATGGACGTAACTGATTATCACATTGATCAAGTGGCAAACTTAG
                                                                                                                                                                                    CGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGATTCAGGTTTCACTACTTCTTAATGAATTAGCAGCCTATGTTACAAAAACGTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGA-----AGAAGGATATATGACAAAAAACAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGTAGAAAGTGTGGACCTAATTCGAATGGAGG 4453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATATAGATAGCATCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>AMATTTTCCCAGATACCGATCMAATTCGCATTGAAATCGGCGAAACCCCGAAGTACGTTT</u>
                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                         18.6%;
                                                                                                                                                                                                                        Score 313; DB 6; Length 4896; Pred. No. 2.8e-60; O; Mismatches 595; Indels 6
                                                                                                                                                                                                                            69;
                                                                        3121
                                                                                                            145
                                                                                                                                                 3061
                                   198
                                                                                                                                                                                      85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (taxor
                                                 5
                                                                                        밁
                                                                                                                         ঠ
                                                                                                                                                                 밁
                                                                                                                                                                                              δ
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                    뭐
                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                 4181
                                                                                                                                                                   4061
                                                                                                                                                                                                                                           4001
                                                                                                                                                                                                                                                                                                                        3941
                                                                                                                                                                                                                                                                                                                                                                                                 3881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3242
                                                                                                                                                                                                      1088
                                                                                                                                                                                                                                                                                   1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3353
                                                                                                                                                                                                                                                                                                                                                             968
                                                                                                                                                                                                                                                                                                                                                                                                                                      908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    199
                                                                                                                                                                                                                                                                                                                                                                                                   GATTTGÁTACAGAATTCTCCAATATTTTATCGGCAGATAAACTTGTCTATAAAATTCGAG 3940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAAC 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATTTAGGGATTTGGATTATTTTAAAATTGCCACACCAGACGGCTATGCAACTTTCG
                                                                                                                                                                                                                                                                     TAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATG
                                                                                                                                                                                                                                                                                                                                             ATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGT 1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGÄÄAĞAAÄAATĞGGGÄAAAAÁCÁCAACCCÄAAAAAGGGAAGATGCAAAATTAT 3820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAGGAAAAGAAATGGAAAACAACATGGAGAAAAAACGTTGGGAAAACACAACAAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGTCACGATCCATTTGATTTTCATATTTGACACCGGAGAAGTAGATACAAATA 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAACAGACATTGTAATGAATGTGCCCGGCGACCTTG---AAATCCTCAGTTACTCTGCCC 3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCAT 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAAGAGGATTTGTAGAAGGTAGTCAAGATTTAGAACTCGATTTGGTACGCTACGGG---G 3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAG 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAG 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----TCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTA
                                                   ATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCTGGAA 1267
                                                                                                                                                                   GGGAGTTTAGAAATGGTTTGGCGAATTGGATGGCTTCATCAAATACAGAAGTAAGGCAAA
                                                                                                                                                                                                      GTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAA 1147
                                                                                                                                                                                                                                                                                                                                                                                                                              ACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCT 967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCAGCTGCAAAGCAAACAATTAATCAATTATTCGCCGATTCACAAGGTACAAATTAA 3880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAG------AGTTAC 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAATCTAGAATTGATAGAATTGGGACCATTATCTGGAGAAGCGTTAGCACAAGTACAAC 3760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAG 733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAATGGAGATCCACACGCATTTTCATTCCATATTGATACAGGTACTACGGATAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGATCGTTGTAAGCAATCCAATTATGTAAATTCAGCTGCAGATGTAAGGCCTGATCAAG 3580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTATCAATCCTTGTGAGGAAATAGAAACACGCTTAGATACTACTTGTGGTGCGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAACTTATCTGTACCAAAAAATAGATGAATCCTTATTAAAACCTTATACACGTTATCAAC 3352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTATAAAGGGCGTGCTATTCAATTATCAGCCGCGAGGGATGAAAA------CTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAACGCTGAAAATAGTTGGACAGCAAATACAGGTGTCACAATCATTGAAGGAGACCCAT 3241
                                                                                                                             TGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGC 1207
                                                                                                                                                                                                                                             TTGAAAATAGAATTCAGAATGCAATTGATTTATATGACGCTCGCAATACCGTGACAAATG
                                                                                                                                                                                                                                                                                                                      TTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTC 313
                                                                                            4180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3292
                                                                                                                                                                                                                                               4060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      253
```

```
APPLICANT: Galina, Chestukhina
TITLE OF INVENTION: NOVEL DELTA-ENDOTOXINS AN
FILE REFERENCE: S-30913C
CURRENT APPLICATION NUMBER: US/10/342,821
CURRENT FILING DATE: 2003-01-15
PRIOR APPLICATION NUMBER: US 60/175,158
PRIOR FILING DATE: 2000-01-07
NUMBER OF SEQ ID NOS: SOFTWARE: Patentin version 3.0
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 11
US-10-342-821-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                              ફ
                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                    S
                                                            밁
                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 809; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 3, Application US/10342821 Publication No. US20030154510A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                            -10-342-821-3
                                                                                                                                                                                                                                                                                                                                                                LOCATION: (1129)..(4458)
OTHER INFORMATION: product: Cry28Aal delta-endotoxin
PUBLICATION INFORMATION:
AUTHORS: Wojciechowska, et al.
TITLE: Two novel delta-endotoxin gene families cry26
TITLE: thuringiensis ssp. finitimus
JOURNAL: FEBS Lett.
VOLUME: 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Jana, Wojciechowska
APPLICANT: Evgeny, Lewitin
APPLICANT: Ludmila, Reyina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: (1)..(4896)
OTHER INFORMATION: Bacillus thuringiensis supsp. finitimus strain VKPM B-1161 (taxor OTHER INFORMATION: :29337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA ORGANISM: Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                            PAGES: 46-48
DATE: 1999-06-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                  ISSUE: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 4896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1268
                                                                                                                                      3002 CAACAAACGCTTTGAAAATGGACGTAACTGATTATCACATTGATCAAGTGGCAAACTTAG
146 AACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTT------
                                                                                                                                                                        26 CGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTAGAAAGTGTGGACCTAATTCGAATGGAGG 4453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGTATTCCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGATTCAGGTTTCACTACTTCTTAATGAATTAGCAGCCTATGTTACAAAAACGTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTT
                                                            TAGAATGTATATCGGACGACCTATATGCAAAGGAAAAATTAAAATTTACTCCATGTATTA
                                                                                                TAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAA 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATATAGATAGCATCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATTTTCCCAGATACCGATCAAATTCGCATTGAAATCGGCGAAACCCCGAAGTACGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGCTATGTGACAATCCTTGACTGTGCAAATCATATTGATACGTTGACATTTAGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Igor, Zalunin
                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                18.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----AGAAGGATATATGACAAAAAACAGTAG 1357
                                                                                                                                                                                                            Score 313; DB 6; L
Pred. No. 2.8e-60;
0; Mismatches 595;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUCLEIC ACID SEQUENCES CODING
                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                               and cry28
                                                                                                                                                                                                                69;
                                                                                                                                                                                                                                                                                                                                                                                                                               from
                                                                                                                                                                                                                                                                                                                                                                                                                               Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1327
                                                                                                                                      3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4360
                        198
                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THEREFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                Ś
                                                                            밁
                                                                                                                S
                                                                                                                                                      밁
                                                                                                                                                                                        S
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                        吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
    4181
                                                                                                                                                                                                                                  4001
                                                                                                                                                                                                                                                                                                                                                                                          3881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3182
                                                                                                                                                                                              1088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3122 AATTCGCGAAACAATTGAGTCAAGCACGAAATCTATTATCCGATCCGAATTTTAACAATC 3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAACACAAGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAATTTAGGGATTTGGATTATTTTTAAAATTTGCCACACCAGACGGCTATGCAACTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGATCGTTGTAAGCAATCCAATTATGTAAATTCAGCTGCAGATGTAAGGCCTGATCAAG 3580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAACGCTGAAAATAGTTGGACAGCAAATACAGGTGTCACAATCATTGAAGGAGACCCAT
                                                                                                                                                                                                                                                                                                                                                                                        GATTTGATACAGAATTCTCCCAATATTTTATCGGCAGATAAACTTGTCTATAAAATTCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                             ACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAG-----AGTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTATCAATCCTTGTGAGGAAATAGAAACACGCTTAGATACTACTTGTGGTGCGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAA 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACAGACATTGTAATGAATGTGCCCGGCGACCTTG---AAATCCTCAGTTACTCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACTTATCTGTACCAAAAATAGATGAATCCTTATTAAAAACCTTATACACGTTATCAAC 3352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAG 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----TCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTA 253
      ATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCTGGAA 1267
                                                                                                            TGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGC
                                                                                                                                                            GGGAGTTTAGAAATGGTTTGGCGAATTGGATGGCTTCATCAAATACAGAAGTAAGGCAAA
                                                                                                                                                                                      GTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAA 1147
                                                                                                                                                                                                                                    TTGAAAATAGAATTCAGAATGCAATTGATTTATATGACGCTCGCAATACCGTGACAAATG
                                                                                                                                                                                                                                                                TAAACGCACGTATCATGCAAGGTTATAATTTTATATGATGCACGAAATGTCATAACAAATG
                                                                                                                                                                                                                                                                                                              ATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ÁTGCAGCTGCAÁAGCAAACAATTAATCAÁTTÁTTCGCCGÁTTCACAAGGTACAAÁATTAA 3880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAGAACAAAAATGGGGAAAAAACACAACCCAAAAAAAGGGGAAGAAGCTGCAAAATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAATCTAGAATTGATAGAATTGGGACCATTATCTGGAGAAGCGTTAGCACAAGTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAATGGAGATCCACACGCATTTTCATTCCATATTGATACAGGTACTACGGATAATAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGTCACGATCGTCATCCATTTTGATTTTCATATTTGACACCGGAGAAGTAGATACAAATA 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAGAGGATTTGTAGAAGGTAGTCAAGATTTAGAACTCGATTTGGTACGCTACGGG----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTATAAAGGGCGTGCTATTCAATTATCAGCCGCGAGGGATGAAAA------CTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITITAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTC 313
                                                                              TCCAGGCACATCCGTGTTGGTACTCTCTAGGCTGGAATGCGCAGGTTGCACAATCTCTAA
                                                                                4180
                                                                                                                    1207
                                                                                                                                                          4120
                                                                                                                                                                                                                                      4060
                                                                                                                                                                                                                                                                                                                4000
                                                                                                                                                                                                                                                                                                                                                      1027
                                                                                                                                                                                                                                                                                                                                                                                            3940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          493
```

8	B &	B 8	B 8	B 8	Query Best I Matche	/ F / L / L	o i i i i	S N S S S S S S S S S S S S S S S S S S				A P	US-10-1 ; Seque; ; Publi	RESULT	유 성	? B \$	S B ;	§ B	Ś
217 TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG 276	181 CTCCAAAATGGAGACTTTTCTGGGAATGATTGGACA 216	121 AAAATAATGTTATGGGATGAAATAAAACTGGCAAAACAACTTAGTCAGTC	61 GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120	GAGTCCTATGTTTACAA GAACCATTTGTTTACAG	18.6%; Score 312.8; DB 5; Length 4366; Best Local Similarity 55.7%; Pred. No. 2.9e-60; Matches 821; Conservative 0; Mismatches 512; Indels 141; Gaps 6;	CDS (224)(4 A-19	ID NO 19 INGTH: 4366 PE: DNA RGANISM: Bacillus popill	PRIOR APPLICATION NUMBER: JP 2001-203463 PRIOR FILING DATE: 2001-07-04 NUMBER OF SEQ ID NOS: 22 SOFTWARE: PALENTIN VET. 2.0	CURRENT APPLICATION NUMBER: US/10/120,544A CURRENT FILING DATE: 2002-04-12 PRIOR APPLICATION NUMBER: UP 2001-115754 PRIOR APPLICATION NUMBER: UP 2001-115754	TITLE OF INVENTION: Polypeptide having larvae growth inhibiting or TITLE OF INVENTION: insecticidal effect on scarabaeidae insects and TITLE OF INVENTION: poynucleotide encoding the same	PLICANT: HASEGAWA, Makoto PLICANT: EHARA, Gaku PLICANT: KIMURA, Masaharu PLICANT: NISHTUASHT Hidadi	PELICANT: TANAKA, Masao PELICANT: YOKOYAMA, Tomoko PELICANT: AOYAGI. Moriichi	-10-120-544A-19 Sequence 19, Application US/10120544A Publication No. US20020182693A1		1410 ALALAGALAGCAL COAGALIGCELLIGHAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAGGAG	ADAPTITICCCAGATACCATACTCAAATTCGCCATGAAATCGGCGAAACCCGAAGTACGTTTT			1268 AAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTT 1327
₽ \$, B &	S B 2	S B &	\$ \$ \$	dd dd	B 8	B 8	B 8	B 8	8 8	B 8	₽ 4	₽ ₽	& <u>B</u>	\$ 8	dg Qg	B 8	B 8	рь
3530 GATGCCAATGTGCAAGATCTTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC 3589	ACTCCTCATGCAAGAGTAGAGCAAGAATATGAGAAATCGGTGCTCGTGCCAAATTGG	GACCAGOGAATCTGATTAAAAATGGGCGCTTTTAGCAATGGGCTTTATCCATTGGCAAGCT	1005 115AC LATER SATISTIAN CASCOLING CONTROL C		ACAAACAAGCGCTATGAAAATTGAAGTTCGAAACCATTTCTGACATTTTGTATGCT	AAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT	769 GGTGAAGCATTGGCACATGTGAAACAAAAGGAAATGGAAACAACACATGGAGAAA 828 	709 AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA 768 	649 GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCT 708 	589 CAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCTGATTTTGATTTTCATATT 648	540GTATCCTACACCAACAGATGGATATGCTCCCGATATGTATG	2810 CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG 2869	2750 AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG 2809	2690 GATIGIACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC 2/49 511 GAATCATCGTC539	451 AATGITCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGAITATCGCTGT 510	391 AGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAGAAA	331 AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA 390	277 ATGCGTGGAGCACGAGACATATATGGAACTCTATTTCCAACCTATATCTGTCAA 330	

```
APPLICANT: KIMURA, Masaharu
APPLICANT: KIMURA, Masaharu
APPLICANT: NISHIHASHI, Hideji
APPLICATION: NISHIHASHI
APPLICATION: NIS
                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                   밁
                                                                                                       ð
                                                                                                                                                  밁
                                                                                                                                                                                      δ
                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
US-11-091-654-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Bacillus popil
FEATURE:
NAMEKEY: CDS
LOCATION: (224)..(4255)
JS-11-091-654-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 19, Application US/11091654 Publication No. US20050172355A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: TANAKA, Masao
APPLICANT: YOKOYAMA, Tomoko
APPLICANT: AOYAGI, Moriichi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       y Match 18.6%;
Local Similarity 55.7%;
hes 821; Conservative
                                                                                                                                                                                                                                                                                                                           2330
                                                                                                                                                                                                                                                                                                                                                                                                                   2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1243
                                                                     2510
                                                                                                                                                      2450
                        331
                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                         GTGAACCATTTGTTTACAGATGGATCGAAAAAGGCGCTAAAAGAAGACACGACCGATTAT
AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGGTTTGTGGGA 390
                                                                                                                                                      ACAAGTCCGAATGTTACGATCCGACAAGATAACCCGATTTTTAAAGGCCATTATCTCAGT 2509
                                                                                                                                                                                                                                                                         CTCCAAAATGGAGACTTTTCT------
                                                                                                                                                                                                                                                                                                                                                                                                                GAGATTGATCAAGCCGCCAACGTGGTAGATTGTATATCGGATG---AGTGTGGACATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG 3683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACGGCGAGAAAAGAAGATCCGGGAGCTGGCAATGTTACCTTTAGTGACTGTGAAAATCAT 3649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                                                                                    TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                          CTGCTCAATGGGAATTTCGATGATCTATATTCAGCTCTGGAGAAGGAGAATCCATGGAAA
                                                                     ATGGCGGGTGCGAACGATATCGAGGCCACCAATGATACCTTCCCCACGTATGTCTATCAA
                                                                                                            ATGCGTGGAGCACGAGACATATATGGAAC----TCTATTTCCAACCTATATCTGTCAA 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HASEGAWA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              popilliae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Makoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 312.8; DB 10; Length 4366; Pred. No. 2.9e-60; 0; Mismatches 512; Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1336
                                                                                                                                                                                                                                                                                GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                2329
                                                                     2569
                                                                                                                                                                                                                                          2449
                                                                                                                                                                                                                                                                                  216
                                                                                                                                                                                                                                                                                                                             2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2272
                                                                                                                                                                                                 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                    S
                                                                                       밁
                                                                                                                           Ş
                                                                                                                                                                    밁
                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                             3530
                                                                                                                                                                                                                                                              3470
                                                                                                                                                                                                                                                                                                       1123
                                                                                                                                                                                                                                                                                                                                                    3410
                                                                                                                                                                                                                                                                                                                                                                                            1063
                                                                                                                                                                                                                                                                                                                                                                                                                                       3350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2990
                                                                                                                                  1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2570 AAAATAGACGAAGCCAAATTAAAGCCGTATACACGTTATAAAGTGCGCGGGTTTGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATCATCGTC-----TCAGTATGTGAGCCCAAGG--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG
                                                                                                                                                                                                                                                                                                                                                 GACCAGCGGAATCTGATTAAAAATGGGCGCTTTAGCAATGGGCTTATGCATTGGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                               GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCACAGATGGATACGCAAGCTTAGATGATCTGGAAGTGATTGAAGAAGGAGCGCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATACCGGGACAATCGATTTGGTCGAAGATTTGGGCATTTGGGTGATCTTCAAAATCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGATTCGGCAGAAACATCGCAAATGTCATCAAGCGCATCAATTTGAGTTCCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGTACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                               CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAG 1336
                                                                                                                  GATGCCAATGTGTCGCAAGATCTTTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC
                                                                                                                                                                                                        AGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                           ACAGGAAATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAATTACGAACTCTATTCAGAGCTAAACACACTGGTTCAGAATGCGTTCTACCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCATCTCGTGCAGTCGATTCCTTATGTATATATAATAATATGTACCGGAAGTTCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAACAAGCGCTATGAAAATTGAAGTTCGAAACAACCATTTCTGACATTTTGTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAATGAAC-----AAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACTGTTCGCAAACGAAACACAAATATGATGCGGCCAAACATGCGGTGATGGCGTTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCGAAGCATTAGAACTTGTCAAAAAAAGAGAAAAAGAAATGGAGACATCAGAAGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAA 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGCAAAGCTCTAGAGCTGTTGGTTACACGCTATAATGAAGAAGTTGATGCGATTTTA
                                                                                          ACGGCGAGAAAAGAACCGGGAGCTGGCAATGTTACCTTTAGTGACTGTGAAAAATCAT
                                                                                                                                                                                                                                                              ÁCTCCTCATGCAAGAGTAGAGCAAGAATÁTGAGAAATCGGTGCTCGTGCTGCCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTACTACCATGAÁT CCTÁGCATGÁATCCTCCCCTTACGCCTGÁAÁTAGCATCCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3683
                                                                                                                                  1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         450
                                                                                                                                                                                                                        1242
                                                                                                                                                                                                                                                                                                                                                    3469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2629
                                                                                                                                                                                                                                                                                                         1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              539
                                                                                                                                                                               3589
                                                                                                                                                                                                                                                                  3529
                                                                                                                                                                                                                                                                                                                                                                                                                                         3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2749
```

```
TITLE OF INVENTION: polypeptide having larvae growth inhibiting or TITLE OF INVENTION: insecticidal effect on scarabaeidae insects and TITLE OF INVENTION: poynucleotide encoding the same FILE REFERENCE: OP1335
CURRENT APPLICATION NUMBER: US/10/120,544A
CURRENT FILING DATE: 2002-04-12
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR FILING DATE: 2001-04-13
PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR FILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SSEQ ID NO 17
                  δ
                                                   밁
                                                                                     Ś
                                                                                                                          밁
                                                                                                                                                      ঠ
                                                                                                                                                                                       문
                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: CDS
; LOCATION: (250)..(4245)
US-10-120-544A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
US-10-120-544A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 17, Application US/10120544A Publication No. US20020182693A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 18.2%;
Best Local Similarity 55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: TANAKA, Masao
APPLICANT: YOKOYAMA, Tomoko
APPLICANT: AOYAGI, Moriichi
APPLICANT: HASEGAWA, Makoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Bacillus
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                       2620
                                                                                                                                                                                                                                                                         2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 817;
                    451
                                                                                          391
                                                                                                                                                               331
                                                                                                                                                                                                                                    277
                                                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĠŦĠŇĄĊĊĄŤŦŦĠŦŤŦĄĊĄĠĄŦĠĠĄŦĊĠĄŇĄŇĄĠĠĊĠĊŤĄŇŇĄĠĄŎĄĠĄĊĠĄĊĊĠĄŤŤĄŤ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT 510
                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATTGATCAAGCCGCCAACGTGGTAGATTGTATATCGGATG---AGTGTGGACATGAG
                                                       AGCAGCAAAGATCTGGAGCTGTTGGTTACACGCTATAATGAAGAAGTTGATGCGATTTTA
                                                                             AAAATAGATGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGC
                                                                                                                                                  AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA
                                                                                                                                                                                                ATGGCGGGTGCGAACGATATCGAGGCCACCAATGATACGTTCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                                                       ACAAGTCCGAATGTTACGATCCGTCAAGATAACCCCGATTTTTAAAGGCCATTATCTCAGT
                                                                                                                                                                                                                                                                                                        TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                                                                                                                             CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGAGAATCCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                CTCCAAAATGGAGACTTTTCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                  AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NISHIHASHI, Hideji
                                                                                                                                                                                                                                    ATGCGTGGAGCACGAGACATATATGGAAC----TCTATTTCCAACCTATATCTGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EHARA, Gaku
KIMURA, Masaharu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 306.4; DB 5;
Pred. No. 8.3e-59;
0; Mismatches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                               GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                          450
                                                                                                                            2619
                                                                                                                                                                                                                                                                       2499
                                                                                                                                                                                                                                                                                                                                                                               216
                                                       2679
                                                                                                                                                                                                2559
                                                                                                                                                                                                                                                                                                          276
                                                                                                                                                                                                                                                                                                                                             2439
                                                                                                                                                                                                                                                                                                                                                                                                                  2379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2262
```

```
8
                                                              밁
                                                                                           Ś
                                                                                                                              밁
                                                                                                                                                        8
                                                                                                                                                                                              밁
                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
3640
                                                                                                                                3520
                                                                                                                                                                                                                                  1123
                                                                                                                                                                                                                                                                 3400
                                                                                                                                                                                                                                                                                                 1063
                                                                                                                                                                                                                                                                                                                                 3340
                                                                                                                                                                                                                                                                                                                                                                                                   3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3040
                                                                                                                                                                                                                                                                                                                                                                 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2680 GATGTACCGGATAATATCCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                  943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      511 GAATCATCGTC-----TCAGTATGTGAGCCAAGG------
GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG
                                                                                                                                                                                                                                                                                                                                                                                                  GATACCGGGACAATCGATTTGGTGGAAGATTTGGGCATTTGGGTGATCTTCAAAATCTGT
                                CAGGAMACACTTAAGTTCACTTCTTGCGAAGAAG
                                                                                                                                GATGCCAATGTGTCGCAACAGCTGTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC
                                                                                                                                                                                                                          ACAGGAAATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG 1182
                                                                                                                                                                                                                                                                                        GATGCACGAAATGTCATAACAAATGGTGACTTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                        ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                        GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAAACACACATGGAGAAA 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCACAGATGGATACGCAAGCTTAGATGATCTGGAAGTGATTGAAGAAGGAGCGCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA 768
                                                                                                ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG 1302
                                                                                                                                                             AGCGCGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG 1242
                                                                                                                                                                                                                                                                   GACCAGCGGAATCTGATTAAAAATGGGCGCTTTAGCAATGGGCTTATGTATTGGCAAGCT 3459
                                                                                                                                                                                                                                                                                                                                 ATGAATTACGAACTCTATACAGAGCTAAACACTCTCGTTCAGAATGCGTTCTACCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAAACACGCGCTATGAAAATTGAAGTTCGAAACAACCATTTCTGACATTTTGTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAA-----TGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CÁCTGTTCGCAAACGAAACACAAATATGATGCGGCCAAACATGCGGTGATGGCGTTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAACGTTGGGAAACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCT 708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTGGATTCGGCAGAAACATCGCAAATGTCATCAAGCGCATCAATTTGAGTTCCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAATATAGATAGAAAGCATGTGAAAGTGTCACGATCGTCATCCATTTGATTTTCATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTACTACCATGAATCCTAGCATGAATCCTCCCCTTACGCCTGAAATAGCATCCAGCCAA 2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG
                                                                                                                                                                                                ACCCCGCATGCACGAGTGGAGCAAGAATATGATAGATCAGTGCTGGTGCTGCCGAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1336
                                                                                                                                                                                                   3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          539
                                                                                                                                                                                                                                                                                                                                                                    1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3099
```

RESULT 15
US-11-091-654-17
; Sequence 17, Application US/11091654
; Publication No. US20050172355A1
; GENERAL INFORMATION:
; APPLICANT: TANAKA, Masso

```
APPLICANT: KIMURA, Masaharu

APPLICANT: NISHIHASHI, Hideji

TITLE OF INVENTION: Polypeptide having larvae growth inhibiting or

TITLE OF INVENTION: insecticidal effect on scarabaeidae insects and

TITLE OF INVENTION: poynucleotide encoding the same

FILE REFERENCE: Op1335

CURRENT APPLICATION NUMBER: US/11/091,654

CURRENT FILING DATE: 2005-03-29

PRIOR APPLICATION NUMBER: JP 2001-115754

PRIOR FILING DATE: 2001-04-13

PRIOR FILING DATE: 2001-04-13

PRIOR FILING DATE: 2001-07-04

NUMBER OF SEQ ID NOS: 22

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 17
                                                                                                                                                                                    S
                                                                                                                                                                                                                                                   ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                 밁
                                                                                                                      8
                                                                                                                                                            밁
                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                              . 5
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
á
                                                           S
                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Simi
Matches 817;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 4359

TYPE: DNA

TYPE: DNA

ORGANISM: Bacillus popilliae
FEATURE:
FEATURE:
NAME/KEY: CDS
LOCATION: (250)..(4245)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -11-091-654-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                         2440
                                                                                                                                                                                                                                                                                                                                                                                                                          2380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2203
                                                                                              2680
                                                                                                                                                              2620
                                                                                                                                                                                                                           2560
                                                                                                                                                                                                                                                                                         2500
                                                                                                                              451
                                                                                                                                                                                             391
                                                                                                                                                                                                                                                           331
                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
 540
                                                                                                                                                                                                                                                                                                                         277
                                                                                                                                                                                                                                                                                                                                                                                        217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAAATAGAAACGACAGACTAT
                                                                                                                                                                                                                                                                                                                                                      TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATTGATCAAGCCGCCAACGTGGTAGATTGTATATCGGATG---AGTGTGGACATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGAACCATTTGTTTACAGATGGATCGAAAAAGGCGCTAAAAGAAGACACGACCGATTAT
                                                                                                                              AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT
                                                                                                                                                                                  AAAATAGATGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGC
                                                                                                                                                                                                                                               AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCCAAAATGGAGACTTTTCT-----
                                                                                              GATGTACCGGATAATATCCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                                                                                                                                              AGCAGCAAAGATCTGGAGCTGTTGGTTACACGCTATAATGAAGAAGTTGATGCGATTTTA
                                                                                                                                                                                                                                                                                           ATGGCGGGTGCGAACGATATCGAGGCCACCAATGATACGTTCCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                                                                                                        ATGCGTGGAGCACGAGACATATATGGAAC----TCTATTTCCAACCTATATCTGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                          CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGAGAATCCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA</u>
                                AAGC C CTATT C GTAT C CACCTTTACTT C CAGAAT GTAACC CTGAGTTT ATAAAT CAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HASEGAWA, Ma
EHARA, Gaku
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YOKOYAMA, Tomoko
AOYAGI, Moriichi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Makoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 306.4; DB 10;
Pred. No. 8.3e-59;
0; Mismatches 516;
                                                                 TCAGTATGTGAGCCAAGG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 4359;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                 2799
                                                                                                                                                              2679
                                                                                                                                                                                                                             2619
                                                                                                                                                                                                                                                                                                                                                                                                                          2439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2379
                                                                                                                                                                                              450
                                                                                                                                                                                                                                                                                                                                                                                          276
                                                                                                                                                                                                                                                                                                                                                                                                                                                        216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
 539
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                             뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                         S
                                                            片
                                                                                  δ
                                                                                                                         밁
                                                                                                                                                     S
                                                                                                                                                                                          뭐
                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                          3340
                                                                                                                                                                                                                                                                                                                                                         1003
                                                                                                                                                                                                                                                                                                                                                                                         3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                       3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2800 CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                       943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     829
GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG
                                                                                                                                                                                                                                                                                                                                                                                                             GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGGATTCGGCÁGAAAACATCGCÁÁATGTCÁTCÁAGCGCÁTCAATTTGAGTTCCÁCÁTT
                  CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAG
                                                                                                                                                                                                                                                                           GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA
                                                                                                                                                                                                                                                                                                                                                       ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAACACGCGCTATGAAAATTGAAGTTCGAAACAACCATTTCTGACATTTTGTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACTGTTCGCAAACGAAACACAAATATGATGCGGCCAAACATGCGGTGATGGCGTTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGAAGCCTTAGAACTTGTCAAGAAAAGAAAAAGAAATGGAGACATCAGAAGGAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCACAGATGGATACGCAAGCTTAGATGATCTGGAAGTGATTGAAGAAGGAGCGCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATACCGGGACAATCGATTTGGTGGAAGATTTGGGCATTTGGGTGATCTTCAAAATCTGT
                                                              ACGGCGAGAAAAAGATCCGGGAGCCGGCAATGTTACCTTTAGTGACTGTGCAAATCAT
                                                                                          ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                            GATGCCAATGTGTCGCAACAGCTGTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC
                                                                                                                                                          AGCGCGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG
                                                                                                                                                                                              ACCCCGCATGCACGAGTGGAGCAAGAATATGATAGATCAGTGCTGCTGCTGCCGAATTGG
                                                                                                                                                                                                                         ACAGGAAATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                          GACCAGCGGAATCTGATTAAAAATGGGCGCTTTAGCAATGGGCTTATGTATTGGCAAGCT
                                                                                                                                                                                                                                                                                                                         ATGAATTACGAACTCTATACAGAGCTAAACACTCTCGTTCAGAATGCGTTCTACCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                         ACAAA-----TGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTACTACCATGAATCCTAGCATGAATCCTCCCCTTACGCCTGAAATAGCATCCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1336
 3673
                                                                                                                              3579
                                                                                                                                                            1242
                                                                                                                                                                                                                          1182
                                                                                                                                                                                                                                                            3459
                                                                                                                                                                                                                                                                                          1122
                                                                                                                                                                                                                                                                                                                                                          1062
                                                                                                                                                                                                                                                                                                                                                                                          3339
                                                                                                                                                                                                                                                                                                                                                                                                                          1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2859
                                                                                                                                                                                              3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  708
```

Search completed: February 15, 2006, 06:38:51 Job time : 1457 secs

This Page Blank (USE

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 sm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
     302.66.48
302.66.48
302.66.48
302.66.30
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.66
302.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq length:
seq length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Published Applications NA New:*

1: /cgn2_6/prodata/2/pubpna/US08 NEW PUB.seq:*

2: /cgn2_6/prodata/2/pubpna/US06_NEW_PUB.seq:*

3: /cgn2_6/prodata/2/pubpna/US07_NEW_PUB.seq:*

4: /cgn2_6/prodata/2/pubpna/US07_NEW_PUB.seq:*

5: /cgn2_6/prodata/2/pubpna/US10_NEW_PUB.seq:*

6: /cgn2_6/prodata/2/pubpna/US10_NEW_PUB.seq:*

7: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq:*

8: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq:*

9: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq2:*

10: i/cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq3:*

11: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq3:*

12: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq4:*

13: /cgn2_6/prodata/2/pubpna/US11_NEW_PUB.seq4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-781-979-6
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        February 15, 2006, 04:36:51 ; Search time 743 Seconds (without alignments) 2076.406 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6247088 seqs, 457523669 residues
     gtgagtcctatgtttacaag.....atcaaggatataaccgttaa 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000000000
     BB
  US-11-091-643-3

US-11-091-643-17

US-11-091-643-17

US-11-091-643-17

US-11-108-389-1

US-11-108-389-1

US-11-108-389-3

US-11-108-389-3

US-11-108-389-17

US-11-108-389-17

US-11-108-389-17

US-11-108-389-17

US-11-108-389-17

US-11-108-389-18

US-11-108-389-18

US-11-108-389-18

US-11-108-389-18

US-11-108-389-18

US-11-108-389-18

US-11-108-389-18

US-11-224-624-18

US-11-224-624-18

US-11-226-943-13

US-11-226-943-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gummaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
Sequence 3, Appli
Sequence 17, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 18, Appli
Sequence 19, Appli
Sequence 5, Appli
Sequence 19, Appli
Sequence 10, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 25, Appli
Sequence 25, Appli
Sequence 13, Appli
Sequence 13, Appli
Sequence 13, Appli
```

Ω		Ω.		Ω																			
5	44	3	42	41	40	39	38	37	36	35	34	ü	32	31	30	29	28	27	26	25	24	23	22
42	42	42	42.2	42.6	42.8	44	44.4	47.4	47.4	65	66.6	68.2	79.6	152.8	164.2	167.6	185	185	217.4	238.6	239.8	258.8	259.4
۵	2.5			2.5				2.8			4.0	4.0	4.7	9.1	9.7		11.0	11.0		14.2	14.2	15.3	15.4
1457619	3309	200	1065	8607	7023	1811	201	3143	3143	3468	3468	3546	3624	402	3546	3546	3468	3468	3547	3534	3546	3579	3534
드	11	11	8	7	11	11	11	ㅁ	H	Φ	0	σ	σ	10	0	σ	თ	σ	σ	11	თ	1	11
US-11-098-686-8739	US-11-098-686-9606	US-11-098-686-5869	US-11-189-817-1	US-10-240-708-71	US-11-052-554A-554	US-11-049-348-2	US-11-124-367A-26061	US-11-165-819-29	US-11-165-819-9	US-10-755-092-2	US-10-755-092-4	US-10-755-092-14	US-10-755-092-6	US-11-091-643-1	US-10-755-092-12	US-10-755-092-10	US-10-755-092-8	US-10-755-092-1	US-10-755-092-16	US-11-226-943-33	US-10-755-092-27	US-11-226-943-29	US-11-226-943-27
Sequence 8739, Ap	Sequence 9606, Ap	Sequence 5869, Ap	Sequence 1, Appli	Sequence 71, Appl	Sequence 554, App	Sequence 2, Appli	Sequence 26061, A	Sequence 29, Appl	Sequence 9, Appli	Sequence 2, Appli	Sequence 4, Appli	Sequence 14, Appl	Sequence 6, Appli	Sequence 1, Appli	Sequence 12, Appl	Sequence 10, Appl	Sequence 8, Appli	Sequence 1, Appli	Sequence 16, Appl	Sequence 33, Appl	Sequence 27, Appl	Sequence 29, Appl	Sequence 27, Appl

ALIGNMENTS

```
APPLICANT: HASEGAMA, Makoto
APPLICANT: EHARA, Gaku
APPLICANT: KIMURA, Masaharu
APPLICANT: NISHIKASHI, Hideji
TITLE OF INVENTION: Polypeptide having larvae growth inhibiting or
TITLE OF INVENTION: Insecticidal effect on scarabaeidae insects and
TITLE OF INVENTION: polypeptide encoding the same
TITLE OF INVENTION INDEER: US/11/091,643
CURRENT APPLICATION NUMBER: US/11/091,643
CURRENT FILING DATE: 2005-03-29
PRIOR APPLICATION NUMBER: UF 2001-115754
PRIOR APPLICATION NUMBER: UP 2001-203463
PRIOR APPLICATION NUMBER: UP 2001-203463
PRIOR APPLICATION NUMBER: UP 2001-203463
PRIOR PILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 3
T.ENGTH: 4359
                                         ş
                                                                                               밁
                                                                                                                                                                                                                                                                                          ; TYPE: DNA; ORGANISM: Bacillus popilliae; FEATURE: NAME/KEY: CDS; LOCATION: (282)..(4229)
US-11-091-643-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
US-11-091-643-3
                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/11091643
Publication No. US20050246789A1
GENERAL INFORMATION:
APPLICANT: TANAKA, Masao
APPLICANT: YOKOYAMA, Tomoko
APPLICANT: AOYAGI, Moriichi
                                                                                                                                                                                           Query Match 22.8%;
Best Local Similarity 58.0%;
Matches 805; Conservative
  2397
                                              61
                                                                                                                             1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGACTAT
                                 GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
GAGATCGATCAAGCCGCCAACGTGGTGGATTGTATATCGGATG---AGTGTGGACATGAG 2453
                                                                                               GTGAACCATTTGTTTACAGATGGATCGAAAAAGGCGCCTAAAAGAAGGCACGACCGATTAT
                                                                                                                                                                                              <u>,</u>
                                                                                                                                                                                           Score 384.2; DB 10; Length of Pred. No. 2.7e-76; O; Mismatches 528; Indels
                                                                                                                                                                                                                                            Length 4359;
                                                                                                                                                                                                54;
                                                                                                                                                                                                Gaps
                                                                                                 2396
                                                                                                                                               60
                                                                                                                                                                                                5
```

중 음 중 음

```
3234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATTTGGAAGTGATTGAAGAAGGAGCGCTGGGTGTCGAAGCATTAGAACTTGTCAAGAAA
                                                   GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAA----TGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATTTGGGCATTTGGGTGATCTTCAAAATCTGTGCCACAGATGGTTACGCAAGCTTAGAT 3113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACAGAAAAACACCGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATCATCGTC----TCAGTATGTGAGCCAAGGGTATCCTACACCAACA 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGTACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAATAGACGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTGTGGGA 390
CGCTTTAGCAATGGGCTTATGTATTGGCAGGCTACCCCGCATGCACGAGTGGAACAAGAA 3533
                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGCGGCCAAACACGCGGTGATGGCGTTATTCACAAACACGCGCTATGAAAAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGAAAAGAAATGGAGACATCAGAAGGAGCAGCACTGTTCGCAAACGAAACACAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGITCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGCAAAGCTCTAGAGCTGTTGGTTACACGCTATAATGAAGAAGTCGATGCGATTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCCAAGCCCGCAATTTA
                                                                                                                                                              AACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGT 1089
                                                                                                                                                                                                                        GTATATAATAATATGTACCGGAAGTTCCAGGTATGAATTACGAACTCTATACAGAGCTA
                                                                                                                                                                                                                                                                         GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA 1029
                                                                                                                                                                                                                                                                                                                                                                      TATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGGAAACACAACAAGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAAACCCTGAGTTTATAAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ÁTGGCGGGTGCGAACGATATTGAGGCCACCAATGATACCTTCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGAGAATCCATGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCAAAATGGAGACTTTTCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGAAACAACCATCTCCAATATTTTGTATGCTGATCATCTCGTGCAGTCGATTCCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGTGGAGCACGAGACATATATGGAAC-----TCTATTTCCAACCTATATCTGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAGTCCGCATGTTACGATCCGTCAAGATAACCCGATTTTTAAAGGCCATTATCTCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                          969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216
                                                   1149
                                                                                                                                                                                                                                                                                                                                   3353
                                                                                                                                                                                                                                                                                                                                                                                                                                              3293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2573
```

8 8 8 8 8

```
GENERAL INFORMATION:
APPLICANT: TANAKA, MASSO
APPLICANT: YOKOYAMA, Tomo
APPLICANT: AVAGI, Moriic
APPLICANT: HASEGAWA, Mako
APPLICANT: EHARA, Gaku
                           S
                                                                            문
                                                                                                               5
                                                                                                                                                                밁
                                                                                                                                                                                           δ
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
US-11-091-643-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; FEATURE:
; NAME/KEY: CDS
; LOCATION: (224)..(4255)
US-11-091-643-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR FILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 19, Application US/11091643 Publication No. US20050246789A1
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 18.6%;
Best Local Similarity 55.7%;
                                                                                                                                                                                                                                                                                                                                                                                                               Matches 821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: NISHIHASHI, Hideji
TITLE OF INVENTION: Polypeptide having larvae growth inhibiting or
TITLE OF INVENTION: insecticidal effect on scarabaeidae insects an
TITLE OF INVENTION: poynucleotide encoding the same
FILE REFERENCE: OP1335
CURRENT APPLICATION NUMBER: US/11/091,643
CURRENT FILING DATE: 2005-03-29
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR FILING DATE: 2001-04-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 4366
TYPE: DNA
ORGANISM: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3594
2450 ACAAGTCCGAATGTTACGATCCGACAAGATAACCCGATTTTTAAAGGCCATTATCTCAGT 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3714 GATATAG
                                      217
                                                                                                                       181
                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                     61 GAMATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                      1 GTGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGGTATCTCAAAACTTGCAT 1209
                                                                                                                                                                                                                                                                                                                              ĠŦĠĀĀĊĊĀŦŦŦĠŦŦŦĀĊĀĠĀŦĠĠĀŦĊĠĀĀĀĀĀĢĠĊĠĊŦĀĀĀĀĠĀĀĀĀČĀĊĠĀĊĊĠĀŦŦĀŦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCGAACACAATCGCGGTTATGTATTGCGTGTCACGGCGAGAAAAGAAGATCCGGGAGCT 3653
                                                                                                                                                                AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA 2389
                                                                                                                                                                                                      GAGATTGATCAAGCCGCCAACGTGGTAGATTGTATATCGGATG---AGTGTGGACATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YOKOYAMA, Tomoko
AOYAGI, Moriichi
HASEGAWA, Makoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGGACCTGGAAAA 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATGAGAAATCTGTACTCGTGCTGCCAAATTGGGATGCCAATGTGTCGCAAGATCTTTGT 3593
                       TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG 276
                                                                               CTGCTCAATGGGAATTTCGATGATCTATATTCAGCTCTGGAGAAGGAGAATCCATGGAAA 2449
                                                                                                                         CTCCAAAATGGAGACTTTTCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCAATGTTACCTTCAGTGACTGTGCAAACCATGTCGACAAGCTGAGCTTTACTTCTTGC 3713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KIMURA, Masaharu
                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             popilliae
                                                                                                                                                                                                                                                                                                                                                                                                           Score 312.8; DB 10;
Pred. No. 2e-60;
0; Mismatches 512;
                                                                                                                                                                                                                                                                                                                                                                                                               Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 4366
                                                                                                                         GGGAATGATTGGACA 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                   2329
                                                                                                                                                                                                                                                                                                                                  2272
```

```
3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2630
3530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAATAGATGAGTCTAAATTTAAAACCATATACACGTTATCGAGTAAGAGGGTTTTGTGGGA
   GATGCCAATGTGTCGCAAGATCTTTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC 3589
                                    AGCGCGGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTTACGTGTG 1242
                                                                                                                                                                                                                                                                                        GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                        ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAATGAAC----AAGAGTTACACTATCATATTAGTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACTGTTCGCAAACGAAACACAAATATGATGCGGCCAAACATGCGGTGATGGCGTTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACGTTGGGAAACAAGAAGAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAA 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCACAGATGGATACGCAAGCTTAGATGATCTGGAAGTGATTGAAGAAGGAGCGCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATACCGGGACAATCGATTTGGTCGAAGATTTGGGCATTTGGGTGATCTTCAAAATCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTGGATTCGGCAGAAACATCGCAAATGTCATCAAGCGCATCAATTTGAGTTCCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCCTGAGTTTATAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAATCATCGTC-----TCAGTATGTGAGCCAAGG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGTACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC 2749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGCAAAGCTCTAGAGCTGTTGGTTACACGCTATAATGAAGAAGTTGATGCGATTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAATAGACGAAGCCAAATTAAAGCCCGTATACACGTTATAAAGTGCGCGGGTTTGTTGGC 2629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGCGGGTGCGAACGATATCGAGGCCACCAATGATACCTTCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                  ĠÁCCAGCGGAÁTCTGÁTTAAAAÁTGGGCGCTTTÁGCAATGGGCTTATGCATTGGCÁAGCT 3469
                                                                                                                                                                                                                                                                                                                                                 ATGAATÍTACGAACTCTATTCAGAGCTAAACACACTGGTTCAGAATGCGTTCTACCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGTACTACCATGAATCCTAGCATGAATCCTCCCCTTACGCCTGAAATAGCATCCAGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCGTGGAGCACGAGACATATATGGAAC----TCTATTTCCAACCTATATCTGTCAA
                                                                                                                                                                  ACAGGAAATGCCGCGGTACAACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG 1182
                                                                                                               ACTCCTCATGCAAGAGTAGAGCAAGAATATGAGAAATCGGTGCTCGTGCTGCCAAATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                539
                                                                                                               3529
```

중 유

밁

경 음

Ś

B & B & B & B & B

S

음 성 음

5 B 5 B 5 B

밁

8 8 8 8 8 8 8 8

```
APPLICANT: AOYAGI, Moriichi
APPLICANT: HASEGAWA, Makoto
APPLICANT: EHARA, Gaku
APPLICANT: RISHIHASHI, Hideji
APPLICANT: NISHIHASHI, Hideji
APPLICATION: insecticidal effect on scarabaeidae insects and TITLE OF INVENTION: poynucleotide encoding the same
FILE REFERENCE: OP1335
CURRENT APPLICATION NUMBER: US/11/091,643
CURRENT APPLICATION NUMBER: JP 2001-01-04
PRIOR APPLICATION NUMBER: JP 2001-115754
PRIOR APPLICATION NUMBER: JP 2001-203463
PRIOR EILING DATE: 2001-07-04
NUMBER OF SEQ ID NOS: 22
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 17
LENGTH: 4359
                               Ş
                                                                                 밁
                                                                                                                       Ś
                                                                                                                                                           밁
                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
US-11-091-643-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-11-091-643-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 17, Application US/11091643
Publication No. US20050246789A1
GENERAL INFORMATION:
APPLICANT: TANAKA, Masso
APPLICANT: YOKOYAMA, Tomoko
APPLICANT: AOYAGI, Moriichi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 18.2%;
Best Local Similarity 55.4%;
Matches 817; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA ORGANISM: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY: CDS
LOCATION: (250)..(4245)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1243
2560
                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAATAGATGAAGCCAAATTAAAGCCATATACACGGTATAAAGTGCGCGGGTTTGTTGGC
                      AAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGAGGGTTTTGTGGGA 390
                                                                                                                                                                         ACAAGTCCGAATGTTACGATCCGTCAAGATAACCCGATTTTTAAAGGCCATTATCTCAGT
                                                                                                                                                                                                                                                                                                                                                                         GAGATTGATCAAGCCGCCAACGTGGTAGATTGTATATCGGATG---AGTGTGGACATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGCCAAAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG 1302
                                                                                                                   ATGCGTGGAGCACGAGACATATATGGAAC-----TCTATTTCCAACCTATATCTGTCAA 330
                                                                                                                                                                                                  TTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAG
                                                                                                                                                                                                                                                          CTGCTCAATGGGAATTTCGATGATCTATATCCAGCTCTGGAGAGGGGAGAATCCATGGAAA
                                                                                                                                                                                                                                                                                                                                                AAAATGATCCTGTTAGATGAAGTAAAATATGCAAAACAACTCAGCCAAGCCCGCAATTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAACCATTTGTTTACAGATGGATCGAAAAAAGGCGCTAAAAGAAGACACGACCGATTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG
                                                                                   ATGGCGGGTGCGAACGATATCGAGGCCACCAATGATACGTTCCCCACGTATGTCTATCAA
                                                                                                                                                                                                                                                                                              CTCCAAAATGGAGACTTTTCT--------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGGCGAGAAAAGAACATCCGGGAGCTGGCAATGTTACCTTTAGTGACTGTGAAAATCAT 3649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    popilliae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 306.4; DB 10; Pred. No. 5.4e-59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 4359;
                                                                                                                                                                                                                                                                                                       -GGGAATGATTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                         2499
                                                                                                                                                                                                                                                               2439
                                                                                                                                                                                                                                                                                                                                                  2379
                                                                                     2559
                                                                                                                                                                                                                    276
                                                                                                                                                                                                                                                                                                          216
                                                                                                                                                                                                                                                                                                                                                                                                                                      2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
```

```
3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391
                                     CAGGAAACACTTAAGTTCACTTCTTGCGAAGAAG 1336
GTCGACAAGCTGAGCTTTACTTCTTGCGATATAG
                                                                                                                                                                                                AGCGCGGGGTATCTCAAAACTTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTG
                                                                                                                                                                                                                                                                                     ACAGGAAATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGG
                                                                                                                                                                                                                                                                                                                                                             GATGCACGAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATCCAGATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACA
                                                                                                                        ATTGCCAAAAAAGAAGGACCTGGAAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAG
                                                                                                                                                                   GATGCCAATGTGTCGCAACAGCTGTGTATCGAACACAATCGCGGTTATGTATTGCGTGTC
                                                                                                                                                                                                                                                  ACCCCGCATGCACGAGTGGAGCAAGAATATGATAGATCAGTGCTGGTGCTGCCGAATTGG
                                                                                                                                                                                                                                                                                                                                     GACCAGCGGAATCTGATTAAAAATGGGCGCTTTAGCAATGGGCTTATGTATTGGCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAATTACGAACTCTATACAGAGCTAAACACTCTCGTTCAGAATGCGTTCTACCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAACTATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCGACTGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAACACGCGCTATGAAAAATTGAAGTTCGAAACAACCATTTCTGACATTTTGTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAA-----TGAACAAGAGTTACACTATCATATTACTTTAGATCATATTCAAAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACTGTTCGCAAACGCAAACACAAATATGATGCGGCCAAACATGCGGTGATGGCGTTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACGTTGGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGAAGCATTGGCACATGTGAAACAAAAGGAAAAGGAAATGGAAAACAACACATGGAGAAA 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCACAGATGGATACGCAAGCTTAGATGATCTGGAAGTGATTGAAGAAGGAGCGCTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATACCGGGACAATCGATTTGGTGGAAGATTTGGGCATTTGGGTGATCTTCAAAATCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACACCGGAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTGGATTCGGCAGAAAACATCGCAAATGTCATCAAGCGCATCAATTTGAGTTCCACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAATATAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTACTACCATGAATCCTAGCATGAATCCTCCCCTTACGCCTGAAATAGCATCCAGCCAA 2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCATCCTCTTGCCACCACAATCAGATGGTCGATTACAATAACATGAACACGAGCACG 2859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCCCTATTCGTATCCACCTTTACTTCCAGAATGTAACCCTGAGTTTATAAATCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATCATCGTC------TCAGTATGTGAGCCAAGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGTACCGGATAATATCCCGCATGCGCCGACTCCTGTCTGCGGTGAATTTGATCGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATGITCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGAGATTATCGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGCAAAGATCTGGAGCTGTTGGTTACACGCTATAATGAAGAAGTTGATGCGATTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3673
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1062
                                                                                                                        1302
                                                                                                                                                                                                         1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2679
                                                                                                                                                                                                                                                  3519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              539
                              S
                                                                            밁
                                                                                                               S
                                                                                                                                                               밁
                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
```

Ş 밁 ঠ 昂 ঠ В 중 유

2413

AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----

5 밁 & 함 밁

중 유

S

음 성 음

á В Ş 밁 Ś В 5 밁 8 밁 S 밁

```
TITLE OF INVENTION: Genes Encoding Proteins
TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/287809
CCURRENT APPLICATION NUMBER: US/11/058,727
CURRENT FILING DATE: 2005-02-15
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILING DATE: 2002-06-26
PRIOR PILING DATE: 2003-04-04
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR FILING DATE: 2003-04-04
PRIOR FILING DATE: 2003-04-04
PRIOR FILING DATE: 2003-06-25
NUMBER OF SEQ ID NOS: 134
SOFTWARE: FASESEQ for Windows Version 4.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/11058727
Publication No. US20050261483A1
GENERAL INFORMATION:
APPLICANT: Andre R. Abad
APPLICANT: Ronald D. Flannagan
APPLICANT: Rafael Herrmann
APPLICANT: Theodore W. Kahn
APPLICANT: Albert L. Lu
APPLICANT: Billy Fred McCutchen
APPLICANT: James K. Presnail
APPLICANT: James F.H. Wong
APPLICANT: James F.H. Wong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (0)...(0)
; OTHER INFORMATION: Cryl218-1
US-11-058-727-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-11-058-727-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 17.9%;
Best Local Similarity 55.4%;
Matches 739; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 3621
TYPE: DNA
ORGANISM: Bacillus thuringiensis
FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(3621)
                                                                                                                                                                   2293
                                                                                                                                                                                                                                                                              2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2053 AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC 2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81
                                                                                                                                                                                                                                                                              GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG 429
                                                                                                                                                                   GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG 2352
                                                                                                                                                                                                                                                                                                                            -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                           GTGAGAGAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA 2232
                                                                                                                                                                                                                                                                                                                                                                                                                           ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                         TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                       CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cao-Guo Yu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 302.6; DB 11; Length Pred. No. 3.7e-58; O; Mismatches 519; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Proteins With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                               197
                                                            2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2172
```

v

```
RESULT 5
US-11-108-389-1
; Sequence 1, Application US/11108389
; Publication No. US20050261188A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   유 성
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ક
                                                                                                                                                                                               ð
                                                                                                                                                                                                                                            멂
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                            ર્ક
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          중 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
APPLICANT: Andre R. Abad
APPLICANT: Ronald D. Flannagan
APPLICANT: Rafael Herrmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430
                                                                                                                                                                                                 TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                           GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                             CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTTAHACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAAGGTTGGGAAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATACAAATGTAGGTATTGATGTCTTAATTAAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAAGCG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTCCTGTTAACTCGGATGGTAGT--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----L-TCAAACGAACCGAATTGTAAAAATGTACCGGATGATTTGCTGCCAGATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                             GCAAGCGATTATG 3328
                                                                                                                                                                                                                                                 GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT 3315
                                                                                                                                                                                                                                                                                                                     TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA 3255
                                                                                                                                                                                                                                                                                                                                             TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                          CANATCANTCATACATCTGTCCTTGTGATTCCANACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         - CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             489
                                                                                                                                                                                                                                                                                                                                                                                            3195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Common Title OF INVENTION: Genes Encoding Proteins With TITLE OF INVENTION: Genes Encoding Proteins With TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/291049
CURRENT APPLICATION NUMBER: US/11/108,389
CURRENT FILING DATE: 2005-04-18
PRIOR APPLICATION NUMBER: 60/31,786
PRIOR FILING DATE: 2002-06-26
PRIOR FILING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-06-25
NUMBER OF SEQ ID NOS: 134
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 3621
                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                    문
                                                                  δ
                                                                                                                                    Ş
                                                                                                                                                                           밁
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-11-108-389-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: Cry1218-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(3621)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA ORGANISM: Bacillus
                                                                                                                                                                                                                                                   2353
                                                                                                                                                                                                                                                                                                                       2293
                                                                                                                                                                                                                                                                                                                                                                                            2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Theodore W. Kahn
Albert L. Lu
Billy Fred McCutchen
James K. Presnail
James F.H. Wong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATACAAAAGATGGCTTACGÁCCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                 CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                       CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                                                                                                                             GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGATTATGGGATGAA
   AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT 489
                                                                                                                                                                                                                                                 TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                       TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT
                                                                                                                                                                                                                                                                                                                       GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGAGAGAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA
                                      TCTCCTGTTAACTCGGATGGTAGT--
                                                                      TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                         -----TCAAACGAACCGAATTGTAAAAATGTACCGGATGATTTGCTGCCAGATGTA 2520
                                                                                                                                                                                 AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17.9%;
ilarity 55.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 302.6; DB 11;
Pred. No. 3.7e-58;
0; Mismatches 519; :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                      369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2112
                                                                                                                                                                                  2468
                                                                                                                                                                                                                    429
```

18 ū

2352

```
Sequence 1, Application US/11224624
Publication No. US20060021096A1

GENERAL INFORMATION:
APPLICANT: Abad, Findre
APPLICANT: Dong, Hua
APPLICANT: Herrmann, Rafael
APPLICANT: Herrmann, Rafael
APPLICANT: McCutchen, Billy F.
APPLICANT: McCutchen, Billy F.
APPLICANT: Schepers, Eric
APPLICANT: Schepers, Eric
APPLICANT: Wong, James
ITILE OF INVENTION: Genes Encoding Proteins With ITILE OF INVENTION: Activity
FILE REFERENCE: 35718/237402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ક
                                                                                                                                                                                                                                                                                         RESULT 6
US-11-224-624-1
                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     670
APPLICATION NUMBER: US/11/224,624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGCGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                            TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGCATGCTCAAGATCATCGATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CANATCANTCATACATCTGTCCTTGTGATTCCANACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTACGTATATAACGAAATGTTCCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACAAAAGGAAAAGAAATIGGAAAACAACATGGAGAAAAAACGTTGGGAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĠTĠAAĠCĠ------ĊATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC 2655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                      3328
                                                          With
                                                                                                                                                                                                                                                                                                                                                                                                                                                3315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT FILING DATE: 2005-09-12
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR PILING DATE: 2003-04-04
PRIOR PILING DATE: 2003-04-04
PRIOR PILING DATE: 2003-04-25
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR PILING DATE: 2003-12-24
NUMBER OF SEQ ID NOS: 143
SOPTWARE: FastSEQ for Windows Version 4.
SEQ ID NO 1
                                밁
                                                                    8
                                                                                                                밁
                                                                                                                                                                                 밁
                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                          S
                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Cry1218-1 US-11-224-624-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 739; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
ORGANISM: Bacillus thur
FEATURE:
NAME/KEY: CDS
LOCATION: (1) ... (3621)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
LOCATION: (0)...(0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 3621
                                      2606
                                                                                                                  2546
                                                                                                                                                                                             2521
                                                                                                                                                                                                                                                                       2469
                                                                                                                                                                                                                                                                                                                                                    2413
                                                                                                                                                                                                                                                                                                                                                                                                                              2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2233
                                                                                                                                                                                                                                   490
  670
                                                                          610
                                                                                                                                                                                                                                                                                                             430
                                                                                                                                                                                                                                                                                                                                                                                      370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22
AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC 2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAGAGAGGCAAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT---- 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                      GTGAAGCG-----CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC 2659
                                                                                                                  TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                              AAAGAAATTGATGATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT 489
                                                                                                                                                                                                                                                                                                                                                                        CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAAATAGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTACGAAAAATACGTTAAAAATAGAAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                          GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                               TCTCCTGTTAACTCGGATGGTAGT---
                                                                                                                                                                                                                                 TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                       -----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA 2520
                                                                                                                                                                                                                                                                                                                                                  AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                            TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGATAT 2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17.9%;
nilarity 55.4%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 302.6; DB 11; Length Pred. No. 3.7e-58; O; Mismatches 519; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.0
```

Length 3621;

75;

Gaps

81 ū

2172

2232

2545

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 7
US-11-058-727-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
APPLICANT: Cao-Guo Yu
TITLE OF INVENTION: Genes Encoding Proteins Wi
TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/287809
CURRENT APPLICATION NUMBER: US/11/058,727
CURRENT FILING DATE: 2005-02-15
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-04-04
PRIOR APPLICATION NUMBER: 10/606,320
                                                                                                                                                                                                                                                                                                                                                        Sequence 3, Application US/11058727 Publication No. US20050261483A1 GENERAL INFORMATION:
                                                                                                                                                                                                               APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                      APPLICANT: Andre
APPLICANT: Ronal
APPLICANT: Rafae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGCGATTATG 3328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGCATGCTCAAGATCATCGTGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAATCAATCATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTTACGTATATAACGAAATGTTCCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTACAGTTCAACCGAATCAAAGATATGTGTTACCGAGTTACTGCGAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                   James; K. Presnail
James F.H. Wong
                                                                                                                                                                                                                                                                     Theodore W. Kahn
Albert L. Lu
                                                                                                                                                                                                                                                                                                      Ronald D. Flannagan
Rafael Herrmann
                                                                                                                                                                                                                                                    Billy Fred McCutchen
                                                                                                                                                                                                                                                                                                                                           R. Abad
                                                                                                                                                                                   With
                                                                                                                                                                                   Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (0)...(0)
; OTHER INFORMATION: Cry1218-2
US-11-058-727-3
                                                         밁
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                        ð
                                                                                                                              문
                                                                                                                                                           S
                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 134
SOFTWARE: FASTSEQ for Windows Version
SEQ ID NO 3
LENGTH: 3633
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: CDS
LOCATION: (1)...(3633)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.9%;
Local Similarity 55.4%;
les 739; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2305
                                                                                                                                                                                                    2618
                                                                                                                                                                                                                                                                         2558
                                                                                                                                                                                                                                                                                                                                           2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2245
                                                                                                                               2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2065 AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                                                                                                                                                                 670
                                                                                                                                                                                                                                     610
                                                                                                                                                                                                                                                                                                                                                                              490
                         790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
     AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAACACAACAA 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA
                                                                                 GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                        GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTTGACACCGGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                         TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                                                                                                                                                                                    AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAGAGAGAGAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                              AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGGATATGCAACA
                                                                                                                                                       AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                      GTGAAGCG-----CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC
                                                                                                                                                                                                                                                                                                                                             TCTCCTGTTAACTCGGATGGTAGT-----A
                                                                                                                                                                                                                                                                                                                                                                                TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                    -----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 302.6; DB 11; Length pred. No. 3.7e-58; o; Mismatches 519; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                  549
                                                                                                                                                                                                                                                                                                                                                                                                                    2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2184
                                                             2787
                                                                                                                                                                                                                                                                                                                                                 2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                       489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
                                                                                              789
                                                                                                                                                                                                                                                                          2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2304
```

```
APPLICANT: Cao-Guo Yu
TITLE OF INVENTION: Genes Encoding Proteins With TITLE OF INVENTION: Genes Encoding Proteins With TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/221049
CURRENT APPLICATION NUMBER: US/11/108,389
CURRENT FILING DATE: 2005-04-18
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR FILING DATE: 2003-04-04
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-06-25
NUMBER OF SEQ ID NOS: 134
SOPTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 3633
TYPE: DNA
ORGANISM: Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3, Application US/11108389
Publication No. US20050261188A1
GENERAL INFORMATION:
APPLICANT: Andre R. Abad
APPLICANT: Ronald D. Flannagan
APPLICANT: Rafael Herrmann
APPLICANT: Theodore W. Kahn
APPLICANT: Albert L. Lu
APPLICANT: Albert L. Lu
APPLICANT: James K. Presnail
APPLICANT: James F.H. Wong
APPLICANT: James F.H. Wong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-11-108-389-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(3633)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAGCGATTATG 3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGCATGCTCAAGATCATCGATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTACGTATATAACGAAATGTTCCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                   With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2907
                                S
                                                                               밁
                                                                                                                                                                                        S
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; FEATURE:
; NAME/KEY: misc feature
; LOCATION: (0)...(0)
; OTHER INFORMATION: Cryl218-2
US-11-108-389-3
                                                                                                                  á
                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 17.9%;
Best Local Similarity 55.4%;
Matches 739; Conservative
                                                                                                                                                               2788
                                                                                                                                                                                                                                                                                                                       2668
                                                                                                                                                                                                                                                                                                                                                                                                     2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2185 GTGAGAGAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2065 AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC 2124
    2908 CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2245 GAGATAAATGGAAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                            670
                                                                                                                                                                                                                                                                                                                                                                                                                                            610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142 ATAAAACTGGCAAAACAACTTAGTCAGTCTGGTAATCTACTCCAAAATGGAGACTT---- 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          310 TTTCCAACCTATATCTGTCAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                    TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                              AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAAGTGTCACGATCGTCATTCCATTTTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTATAGAATGTATGTCAGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                  AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA 290
                                                                                                                      GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                               CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG 789
                                                                                                                                                                                                                                                                                                                                                  AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG 2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                           CTCGGAAACCTAGAATTGGTCGAAGAGGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                       AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCCAGAGGGATATGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAGCG-----CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTCCTGTTAACTCGGATGGTAGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA 2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 302.6; DB 11; Length Pred. No. 3.7e-58; 0; Mismatches 519; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2184
          2967
                                                                                                                                                                  2847
                                                                                                                                                                                                      849
                                                                                                                                                                                                                                                                                                                                                                                                       2667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2557
                                                                                                                                                                                                                                             2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                           909
```

```
TITLE OF INVENTION. Genes Encoding Proteins With Pesticidal
TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/297402
CURRENT APPLICATION NUMBER: US/11/224,624
CURRENT APPLICATION NUMBER: US/505-09-12
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILING DATE: 2002-06-26
PRIOR FILING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-06-25
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR PILING DATE: 2003-06-25
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR PILING DATE: 2003-012-24
NUMBER OF SEG ID NOS: 143
SOFTWARE: FastSEQ for Windows Version 4.0
SEG ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
US-11-224-624-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Abad, Andre
APPLICANT: Dong, Hua
APPLICANT: Herrmann, F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 3, Application US/11224624 Publication No. US20060021096A1
Query Match
Best Local Similarity
                                                  FEATURE:
NAME/KEY: misc feature
LOCATION: (0)...(0)
OTHER INFORMATION: Cryl218-2
-11-224-624-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                      FEATURE:
NAME/KEY: CDS
LOCATION: (1)...(3633)
                                                                                                                                                                                          LENGTH: 3633
TYPE: DNA
ORGANISM: Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGCGATTATG 3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGCATGCTCAAGATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CANATCATICATACATCTGTCCTTGTGATTCCANACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTTACGTATATAACGAAATGTTCCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Herrmann, Rafael
Lu, Albert
McCutchen, Billy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wong, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schepers,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rice, Janet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eric
17.9%;
Score 302.6; DB 11; Pred. No. 3.7e-58;
                 Length 3633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3207
                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                 á
                                                                         밁
                                                                                                                                            밁
                                                                                                                                                                                 S
                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
 3028
                                                                                                                                                                                                                            2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2481
                                                                                                                                                  2908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2425 AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                 GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                             GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                   CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                  CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA 2847
                                                                                                                                                                                                                                                                                                                                                                                                               GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGAAATTGATGCTATCATGAATGTTCCAAAATGATTTGGCCTATATGCAGCCTAATCCT 489
 GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                               CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                   TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                          AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA 2907
                                                                                                                                                                                                                                                                                                                                                                            CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ĠŢĠĂĀĠĊĠ------ĊĀŢĠĀĠŢŢĊŢĊŢĀŢŢĠĀŢĀĊĀĠĞŢĠĀĀĀŢĊĠĀŢŦĀĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTCCTGTTAACTCGGATGGTAGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                           CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----TCAAACGAACCGAATTGTAAAAATGTACCGGATGATTTGCTGCCAGATGTA 2532
```

2617 609 2557 2480

2727

789

729 2667

3087

3027

2967

963

909

Matches 73:	739; Conservative 0; Mismatches 519; Indels 75; Gaps	5;
22	AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT	81
82	TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAAAA	141
2125	TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA	2184
142	ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT 197	197
2185	GTGAGAGAGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA 2244	2244
198	TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT	249
2245	GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGGTTATAGAAGGGGAT	2304
250	250 CCTATTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309	309
2305	GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG	2364
310	310 TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT	369
2365	TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT	2424
370) CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG 429	429

11203 3207 1263 3267 1323 33267 1323 3327	142 ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT 1	82 TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141 	22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81	Query Match 17.9%; Score 302.6; DB 11; Length 4874; Best Local Similarity 55.4%; Pred. No. 3.9e-58; Matches 739; Conservative 0; Mismatches 519; Indels 75; Gaps	NAME/KEY: misc_feature LOCATION: (0)(0) OTHER INFORMATION: Genomic DNA 1218-1 11-058-727-17	LENGTH: 4874 TYPE: DNA ORGANISM: Bacillus thuringiensis FBATURE:		PRIOR FILING DATE: 2002-06-26 PRIOR APPLICATION NUMBER: 60/460,787 PRIOR FILING DATE: 2003-04-04 PRIOR APPLICATION NUMBER: 10/606.320	FILE REFERENCE: 35718/287809 CURRENT APPLICATION NUMBER: US/11/058,727 CURRENT FILING DATE: 2005-02-15 PRIOR APPLICATION NUMBER: 60/391,786	APPLICANT: James F.H. Wong APPLICANT: Cao-Guo Yu TITLE OF INVENTION: Genes Encoding Proteins With Pesticidal TITLE OF INVENTION: Activity		GENERAL INFORMATION: APPLICANT: Andre R. Abad APPLICANT: Ronald D. Flannagan APPLICANT: Rafael Herrmann	RESULT 10 US-11-058-727-17 ; Sequence 17, Application US/11058727 ; Publication No. US20050261483A1	GCAAGCGATTATG				
--	--	---	--	--	--	---	--	---	---	---	--	--	--	---------------	--	--	--	--

```
TITLE OF INVENTION: Genes Encoding Proteins Wit TITLE OF INVENTION: Activity TITLE OF INVENTION: Activity File Reference: 35718/291049

CURRENT APPLICATION NUMBER: US/11/108,389

CURRENT FILING DATE: 2005-04-18

PRIOR APPLICATION NUMBER: 60/391,786

PRIOR FILING DATE: 2002-06-26

PRIOR PRIOR APPLICATION NUMBER: 60/460,787

PRIOR APPLICATION NUMBER: 10/606,320

PRIOR APPLICATION NUMBER: 10/606,320

PRIOR PILING DATE: 2003-06-25

NUMBER OF SEQ ID NOS: 134

SOFTWARE: PASESEQ for Windows Version 4.0

SEQ ID NO 17
                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
US-11-108-389-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음 성
                                                                                                             밁
                                                                                                                                                8
                                                                                                                                                                                    밁
                                                                                                                                                                                                              ફ
                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Andre R. A
APPLICANT: Romald D.
APPLICANT: Rafael He
APPLICANT: Theodore
APPLICANT: Albert L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                 á
                                                   밁
                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-11-108-389-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 17, Application US/11108389 Publication No. US20050261188A1
                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                            Matches 739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
ORGANISM: Bacillus thuringiensis
FEATURE:
NAME/KEY: misc_feature
LOCATION: (0) ...(0)
OTHER INFORMATION: Genomic DNA 1218-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 4874
                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                          2783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4046
                                                     3023
                                                                                                                                                                                                                                                         2843
                                                                                                                      2963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1264
                   310
                                                                                                                                                        198
                                                                                                                                                                                                                         142
                                                                                                                                                                                                                                                                                         82
                                                                                                                                                                                                                                                                                                                                                          22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Theodore W. Kahn
Albert L. Lu
Billy Fred McCutchen
James K. Presnail
James; F.H. Wong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAAAAGGGTATGTAACGATGATGGATGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                      GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                       GTGAGAĠAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA 2962
                                                                                                                                                                                                              ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                       TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                          AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC 2842
                                                                                                                                                                                                                                                                                                                                                          AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAGCGATTATG 4058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTTGCGAAGAAG 1336
TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                     GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAAACG
                                                                                   CCTATTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                       тстатабаатбтатбтсабатбаасаааатсстсаббаалалатаатбттатбббатбаа
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Andre R. Abad
Ronald D. Flannagan
Rafael Herrmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cao-Guo Yu
                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                    TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                        17.9%; Score 302.6; DB 11; 55.4%; Pred. No. 3.9e-58; ative 0; Mismatches 519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 4874,
                                                                                                                                                                                                                                                                                                                                                                                            75;
                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                           2902
                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4045
                                                                                                                                                                                                                                                                                                                                                              48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                    밁
                                                                                                                                                                      á
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ठ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
   RESULT 12
US-11-224-624-17
                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3199
                                                                                                                                                                                                           3926
                                                                                                                                                                                                                                                                          3866
                                                                                                                                                                                                                                                                                                          1144
                                                                                                                                                                                                                                                                                                                                            3806
                                                                                                                                                                                                                                                                                                                                                                            1084
                                                                                                                                                                                                                                                                                                                                                                                                               3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3083 TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT 3142
                                                                                                                                                                         1264
                                                                                                                                                                                                                                           1204
                                                                                                                                                                                                                                                                                                                                                                                                                                               1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          790
                                                                                                                                                                                                                                                                                                                                                                          AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGAAGTGTCACGATCGTCATTTGATTTTCATATTTGACACCGGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGAAATTGATGCTATCATGAATGTTCCCAAATGGTTTGGCCTATATGCAGCCTAATCCT
                                                                                                      TCTTGCGAAGAAG 1336
                                                                                                                                                                      GGAAAAGGGTATGTAACGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                      GCAAGCGATTATG
                                                                                                                                        GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTAGT
                                                                                                                                                                                                           TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGTA 3985
                                                                                                                                                                                                                                TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                          CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                          CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                 GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTCCTGTTAACTCGGATGGTAGT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA
                                                                                                                                                                                                                                                                                                                                            AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC
                                                                      4058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           429
                                                                                                                                           4045
                                                                                                                                                                                                                                                                                                                                                                                                                   3805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3198
                                                                                                                                                                                                                                                                              3925
                                                                                                                                                                                                                                                                                                                                               3865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3275
                                                                                                                                                                                                                                                                                                                1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               789
```

```
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR PILING DATE: 2002-06-26
PRIOR PILING DATE: 2003-04-04
PRIOR PILING DATE: 2003-04-04
PRIOR APPLICATION NUMBER: 10/66,320
PRIOR PILING DATE: 2003-06-25
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR APPLICATION NUMBER: 10/746,914
PRIOR PILING DATE: 2003-12-24
NUMBER OF SEQ ID NOS: 143
SOFTWARE: FastSEQ for Windows Version 4.
SEQ ID NO 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 17, Application US/11224624
Publication No. US20060021096A1
GENERAL INFORMATION:
APPLICANT: Abad, Andre
APPLICANT: Dong, Hua
APPLICANT: Herrmann, Rafael
APPLICANT: Lu, Albert
APPLICANT: Rice, Janet
APPLICANT: Rice, Janet
APPLICANT: Schepers, Eric
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-11-224-624-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Sim
Matches 739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Wong, James
TITLE OF INVENTION: Genes Encoding Protein
TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/297402
CURRENT APPLICATION NUMBER: US/11/224,624
CURRENT FILING DATE: 2005-09-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Bacillus thuringiensis
FEATURE:
NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: Genomic DNA 1218-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 4874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                        3083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2783
                                                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142
               490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22
            TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                  CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                      -----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA
                                                                                                                               AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                               AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                        TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                        TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTATTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGAGAGAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTATAGAATGTATGTCAGATGAACAAAATCCTTCAGGAAAAAATAATGTTATGGGATGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 302.6; DB 11;
Pred. No. 3.9e-58;
0; Mismatches 519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Proteins With
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gape
                                                                                                                                                                                               3198
                                                                                                                                                                                                                                                                                                                        3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2902
Sequence 18, Application US/11058727
Publication No. US/20050261483A1
GENERAL INFORMATION:
APPLICANT: Andre R. Abad
APPLICANT: Ronald D. Flannagan
APPLICANT: Rafael Herrmann
APPLICANT: Theodore W. Kahn
APPLICANT: Albert L. Lu
APPLICANT: Billy Fred McCutchen
APPLICANT: James K. Presnail
APPLICANT: James F.H. Wong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-11-058-727-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3276 TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG 3335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGGGGGGGTATCTCAAAAC 120:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAGCGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTTAAACGCACGTATCATGCAAGGTTATAATTTTATATGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 аласалаласында бай жайын кайман кайм
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAGCG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTCCTGTTAACTCGGATGGTAGT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC 3385
```

3865

3805

3745

3625

789 3445

Ś 밁 ঠ g ঠ S

S

789

849

4100

3980

```
; APPLICANT: Cao-Guo Yu
TITLE OF INVENTION: Genes Encoding Proteins With Per
TITLE OF INVENTION: Activity
FILE REFERENCE: 35718/287809
CCURRENT APPLICATION NUMBER: US/11/058,727
CURRENT FILING DATE: 2005-02-15
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILLING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 2003-06-25
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-06-25
PRIOR FILING DATE: 2003-06-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-11-058-727-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 134
SOFTWARE: FRANKSEQ for Windows Version
SEQ ID NO 18
LENGTH: 6613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Sim:
Matches 739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
ORGANISM: Bacillus thuringiensis
FEATURE:
NAME/KEY: misc_feature
LOCATION: (0)...(0)
OTHER INFORMATION: Genomic Cry1218-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3318
                                                                    3871
                                                                                                                                                                                                                                                                       3786
                                                                                                                                                                                                                                                                                                                                                                         3734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3618
                                                                                                                                                                      3811
                                                                                                                                                                                                                                                                                                                         490
                                                                                                                                                                                                                                                                                                                                                                                                                        430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          142
                  670
                                                                                                                                                                                                                     550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAATAGATACGGAAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGAGAGAGGCAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA 3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                      TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACCGTTCTG
                                                                                                                                                                                                                     CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGATAT 3677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                  AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                         GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                         TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                                                                                                                         ----TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA 3789
                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                       TCTCCTGTTAACTCGGATGGTAGT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17.9%; Score 302.6; DB 11; Length 55.4%; Pred. No. 4.1e-58; tive 0; Mismatches 519; Indels
                                                                    CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC 3920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pesticidal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3437
                                                                                                                                                                                                                                                                       3810
                                                                                                                                                                                                                                                                                                                         549
                                                                                                                                                                                                                                                                                                                                                                                                                           489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             81
Sequence 18, Application US/11108389
Publication No. US20050261188A1
GENERAL INFORMATION:
APPLICANT: Andre R. Abad
APPLICANT: Ronald D. Flannagan
APPLICANT: Ronald D. Flannagan
APPLICANT: Ronald D. Flannagan
APPLICANT: Ronald D. Flannagan
APPLICANT: Billy Fred McCutchen
APPLICANT: Billy Fred McCutchen
APPLICANT: James F.H. Wong
APPLICANT: Cao-Guo Yu
ITILE OF INVENTION: Genes Encoding Prote
FITILE OF INVENTION: Genes Encoding Prote
FITILE OF INVENTION NUMBER: US/11/108,38
CURRENT APPLICATION NUMBER: 00/391,786
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-04-04
PRIOR FILING DATE: 2003-04-05
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR FILING DATE: 2003-06-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-11-108-389-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGAAGACGTGAAGAAACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAGCGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTGCGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCATGCTCAAGATCATGATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1336
                                                                                                                                                                                                                                                                          Proteins
                                                                                                                                                                                                                                                                            With
```

4580 1323 4520 1263 4460 1203 4340

4280

4220

963 4160

S

S 밁

ş 밁 δ 밁 S 밁

밁

멍 8 밁 ð 밁 ঠ 밁 ş ₽ á 밁 ঠ

S

4340

4280

4220

```
; NAME/KEY: misc_feature
; LOCATION: (0) ...(0)
; OTHER INFORMATION: Genomic Cryl218-2
US-11-108-389-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 134
SOFTWARE: FRACESEQ for Windows Version
SEQ ID NO 18
LENGTH: 6613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA ORGANISM: Bacillus thuringiensis FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                       3921
                                                                                                                                                                                                                                                                                                                                                                                                                               3811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3498
                                                                                                                                                                                                                                                                                      670
                                                                                                                                                                                                                                                                                                                                                                                   610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                         GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTTGGCACATGTG
GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                            CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGAAGACGTGAAGAAACAGATAGA
                                                                                         AAACAAAAGGAAAAGAAATGGAAAACACACATGGAGAAAAAACGTTGGGAAACACAA
                                                                                                                                           CTCGGAAACCTAGAATTGGTCGAAGAGGGGACCTTTATCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                       AATGAMAATGCAĞĞAATATGGĞTTGGATTTAAGATTACGGACCCAĞAGĞĞATATĞCAACA
                                                                                                                                                                                                                                                                                    AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                      GTGAAGCG----
                                                                                                                                                                                                                                                                                                                                                                         GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAACCGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTCCTGTTAACTCGGATGGTAGT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGTCA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGATAAATGGAĞAAAATĞGCTĞĞACGGCAAĞTACGĞGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAGAGAGAGAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGATTTCCAA 3497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17.9%;
ilarity 55.4%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCAGATGTA 3785
                                                                                                                                                                                                                                                                                                                                      - CATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 302.6; DB 11; Length 6613; Pred. No. 4.1e-58; 0; Mismatches 519; Indels 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75; Gaps
                                                                                            849
                                                                                                                                                                                                                                                                                                                                      3920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      429
                                                                                                                                           4040
                                                                                                                                                                                                                                       3980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 18, Application US/11224624
Publication No. US20060021096A1
GENERAL INFORMATION:
APPLICANT: Abad, Andre
APPLICANT: Dong, Hua
APPLICANT: Herrmann, Rafael
APPLICANT: Lu, Albert
                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/11/224,624
CURRENT FILING DATE: 2005-09-12
PRIOR APPLICATION NUMBER: 60/391,786
PRIOR FILING DATE: 2002-06-26
PRIOR APPLICATION NUMBER: 60/460,787
PRIOR FILING DATE: 2003-04-04
PRIOR APPLICATION NUMBER: 10/606,320
PRIOR APPLICATION NUMBER: 10/766,914
PRIOR FILING DATE: 2003-12-24
PRIOR FILING DATE: 2003-12-24
NUMBER OF SEQ ID NOS: 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-11-224-624-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                     SOFTWARE: FASTSEQ
SEQ ID NO 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Genes Encoding Proteins TITLE OF INVENTION: Activity FILE REFERENCE: 35718/297402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
         ORGANISM: Bacillus thuringiensis FEATURE: NAMB/KEY: misc_feature LOCATION: (0)...(0) OTHER INFORMATION: Genomic Cryl218-2
                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4581 GCAAGCGATTATG 4593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4161 CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4101 AGGTATATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA 4160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                 6613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTTGCGAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAACAGAAACGCTTACTTTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCGAGAAAAGAAGGGGGTA 4520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCCAAAAAAAGAAGGACCT 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schepers, Eric
Wong, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lu, Albert
McCutchen, Billy
Rice, Janet
                                                                                                                                                                                                                 for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     With Pesticidal
```

5

밁 S 밁 ş

밁 ક S 밁

밁

S

밁 ঠ 8 δ 밁 Ś 밁

Ş 밁

Ş 밁 ફ 밁 S 밁

	CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAG	4221	밁
ататсаа 1023	CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT	, 964	ð
 GTCCATT 4220	CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCCCAAGATCTGATACAGTCCATT	4161	밁
GTCGATT 963	TATCATATTACTT	, 910	ð
TCAGCAA 4160	AGGTATÀTGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGC	4101	닭
GTTACAC 909	GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAC	850	S
CAGATAGA 4100	CAAAGAGAAGAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAACAGAT	4041	밁
ACAACAA 849	AAACAAAAGGAAAAGGAAAATGGAAAACAACACATGGAGAAAAAAACGTTGGGAAACA	790	ð
ACGCTTG 4040	CTCGGAAACCTAGAATTGGTCGAAGAGGGACCTTTATCAGGAGACGCATTAGAACGCTTG	3981	뫄
ACATGIG 789	GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCA	, 730	ð
TGCAACA 3980	AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATATGCAAC	3921	밁
CGCTACA 729		, 670	ð
CGATTAC 3920	GTGAAGCGCATGAGTTCTCTATTCCTATTGATACAGGTGAAATCGATTAC	3871	닭
AGATACA 669	GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTA	, 610	S
CGTTCTG 3870	TCAATCGATGCAGCGAACAAAAGTATGTGAATAGCCGTTTAGAAGTAGAAAACC	3811	밁
AGAAAGCAT 609	AACAGATGGATATGCTCCCGATATGTATGCATGCCCCGCAAAATATAGAT	550	δ.
A 3810	TCTCCTGTTAACTCGGATGGTAGT	3786	뫄
TCCTACA 549	TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCC	490	S
CAGATGTA 3785	TCAAACGAACCGAATTGTAAAAAATGTACCGGATGATTTGCTGCCA	3734	닭
CTAATCCT 489		430	Ş
TCA 3733	AGATTGAGAGGGTTTGTCGGAAGCAGTCAAGGATTGGAAATTTTCACAATTCGT	3678	밁
GTTACGGG 429	TAGTAAAGATTTGAAATTAATGGTAACAC	370	S
AAGATAT 3677	TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACA	3618	밁
ACGTTAT 369	TTTCCAACCTATATCTGTCAAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT	310	Ş
CGGAAACG 3617	GCTTTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGG	3558	닭
AACTCTA 309	CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGA	250	S
AGGGGAT 3557	GAGATAAATGGAGAAAATGGCTGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT	3498	밁
CAATAAT 249	TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCC	198	ð
TTTCCAA 3497	GTGAGAGAGGCAAAAACGCCTCAGTGAGGCACGTAATTTGCTTCAAGATCCAGAT	3438	В
CTT 197	ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT	142	S
IGATGCA 3437	TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTT	3378	뫄
GGATGAA 141	TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATG	82	Ş
GCAAAC 3377	AATACAAAAGATGGCTTACGACCAGGCGTAACGGATTATGAAGTGAATCAAGCG	3318	밁
GGCCATT 81	AGTACGAAAAATACGTTAAAAATAGAAAACGACAGATTATGAAATAGATCAAGCG	22	Ş
Gaps 5;	17.9%; Score 302.6; DB 11; Length 6613; Similarity 55.4%; Pred. No. 4.1e-58; 19; Conservative 0; Mismatches 519; Indels 75;	Query Match Best Local Matches 73	

B	δ	용	Ş	₽	ફ	뭥	ş	dd	8	뭥	Ś
4581	1324	4521	1264	4461	1204	4401	1144	4341	1084	4281	1024
GLAAGCGATTATG 4593	тсттесеваевае 1336	GGAAATGGATATGTAAGTATCCGTGATGGTGGAAATCAAAACAGAAACGCTTACTTTTAGT 4580	GGAAAAGGGTATGTAACGATGATGGATGTAATGGAAAGCAGGAAACACTTAAGTTCACT 1323	TTTACAGTTCAACGGAATCAAAGATATGTGTTTACGAGTTACTGCGAGAAAAGAAGGGGTA 4520	TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGACCT 1263	CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGATGAGCAAGTTTCGCAACAG 4460	CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203	AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA 4400	AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143	GAATTAACAGATCGACTCCAACAAGCGTGGAGTTTGTATGATCAGCGAAATGCCATACCA 4340	GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083

Search completed: February 15, 2006, 06:53:08 Job time : 748 secs

This Page Blank (uspto)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                           763.8
379
379
379
357.4
357.4
311.8
311.8
311.8
311.8
311.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
211.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nucleic search, using sw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents NA:*

1: /cgn2_6/ptodata/l/ina/1_COMB.seq:*

2: //cgn2_6/ptodata/l/ina/5_COMB.seq:*

3: /cgn2_6/ptodata/l/ina/6A_COMB.seq:*

4: /cgn2_6/ptodata/l/ina/6B_COMB.seq:*

5: /cgn2_6/ptodata/l/ina/PCTUS_COMB.seq:*

6: /cgn2_6/ptodata/l/ina/PCTUS_COMB.seq:*

7: /cgn2_6/ptodata/l/ina/PCOMB.seq:*

8: /cgn2_6/ptodata/l/ina/RE_COMB.seq:*

9: /cgn2_6/ptodata/l/ina/Backfilesl.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       February 15, 2006, 03:34:22; Search time 324 Seconds (without alignments) 9249.904 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1303057 seqs, 888780828 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-781-979-6
1686
1166.00
116.00
116.00
116.00
116.00
116.00
116.00
116.00
116.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gtgagtcctatgtttacaag......atcaaggatataaccgttaa 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.7
Copyright (c) 1993 - 2006 Biocceleration Ltd.
344771
344771
344771
375777
375777
37577
37577
37577
37577
37577
37577
37577
37577
37577
37577
37577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3543
3543
3504
3690
3797
3797
3797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멂
                       US-10-089-678-2

US-10-089-678-3

US-07-915-203-1

US-08-272-887-1

US-08-789-449-1

US-08-789-1408-1

US-07-812-180A-1

US-07-913-320-1

US-07-973-320-1

US-07-973-320-1

US-08-315-468-3

US-08-315-468-3

US-07-973-320-1

US-08-810-685-1

US-08-880-685-1

US-08-880-685-7

US-09-889-477-75

US-09-589-477-75

US-09-99-285A-75

US-08-91-3681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-224-024-27
PCT-US94-07902-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mode1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2606114
                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                       2, Appli
1, Appli
1, Appli
1, Appli
1, Appli
2, Appli
1, Appli
1,
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25
260.6	260.6	σ	261		261	61.	61.	61.	265.8	268.8	268.8	268.8	268.8	269	269	269	269	269	269	269
15.5					15.5													16.0	16.0	16.0
3713	3713	3713	3531	3531	3531	3504	3504	3504	3504	3471	3471	3471	3471	4344	4344	4344	4344	4344	4344	3522
N	N	N	w	w	w	Φ	N	ผ	w	w	w	w	w	w	w	W	w	N	ຎ	9
US-08-474-038-1	US-08-176-865-1	US-08-100-709-1	US-08-855-160-7	US-08-855-160-5	US-08-855-160-3	PCT-US95-10310-3	US-08-962-190-3	US-08-291-368-3	US-09-661-322A-39	US-10-099-285A-73	US-09-661-322A-27	US-09-589-477-73	US-09-002-285-73	US-09-220-806-4	US-09-471-177-4	US-09-019-809-4	US-08-455-838-4	US-08-379-656B-4	US-08-532-547-4	5164180-3
Sequence 1, Appli	Sequence 1, Appli	Sequence 1, Appli	Sequence 7, Appli	Sequence 5, Appli	Sequence 3, Appli	Sequence 3, Appli	'n	Sequence 3, Appli	Sequence 39, Appl	Sequence 73, Appl	Sequence 27, Appl	Sequence 73, Appl	Sequence 73, Appl	Sequence 4, Appli	Patent No. 5164180					

ALIGNMENTS

```
; TOPOLOGY: li
; MOLECULE TYPE:
US-09-224-024-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 1
US-09-224-024-27
                                                                                                      INFORMATION FOR SEQ ID NO: 27
SEQUENCE CHARACTERISTICS:
LENGTH: 3543 base pairs
TYPE: nucleic acid
STRANDENNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 27, Application US/09224024
Patent No. 6056953
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:

APPLICANT: Leslie Hickle

APPLICANT: Jewel Payne

TITLE OF INVENTION: Materials and Methods for the Control

TITLE OF INVENTION: Calliphoridae Pests

NUMBER OF SEQUENCES: 31

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                    NAME: Sallwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: MA79
TELECOMMUNICATION INFORMATION:
TELEPHONE: 904-375-8100
TELEFAX: 904-372-5800
                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: F
                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/09/224,024 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 2421 N.W. CITY: Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3E: David R. Saliwanchik
2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                              linear
                                                                       DNA (genomic)
   45.3%;
71.9%;
                                                                                                                                                                                                                                                                                                                                                        08/856,226
                                                                                                                                                                                        27:
   Score 763.8; DB 3; Pred. No. 1.3e-183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #1.25
                     Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    e
E
```

Matches 1050; Conservative

2090

N

```
AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC
                                                                                                                                                                                                                                                                                           GGGAAACACAACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCATTAGATACAAATGAAAATATAGGGGTTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTCGTATTCATGCCAATATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATA 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAATAAAGATTTGAAATTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA 121
  ATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACAA 3157
                              ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCAC 1069
                                                                                                                                                                  TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT 3037
                                                                                                                                                                                                                                                                                                                                    CACTGTCACGCGTGAAACACATGGAGAAGGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGATGGTACGATATTTCCGACCTATATATTCCAAAAAATTGATGAATCAAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGGGAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAATACATTTTATGCAAATCCTATAAAAAACACTTTACAATCAGAACTTACAGATTATG
                                                                                  TGGTACAATCGATTCCATATGTGTACAATGATTGGTTGTCAGATGTTCCAGGTATGAATT 3097
                                                                                                                                                                                                                                                                                                                                                                           CATTGGCACATGTGAAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAAACGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                       TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT 1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCACGCTATGGGGAAGAAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ------CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 387; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                         949
                                                                                                                                                                                                                                                                                                                                                                             835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2449
                                                                                                                                                                                                                                                    2977
                                                                                                                                                                                                                                                                                                                                    2917
                                                                                                                                                                                                                                                                                                                                                                                                                       2857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                              775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 2
PCT-US94-07902-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 27, Application GENERAL INFORMATION:
                                                          TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAMME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794.
REFERENCE/DOCKET NUMBER: WA79
TELECOMMUNICATION INFORMATION:
TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: MAINTIFLE OF INVENTION: CA. NUMBER OF SEQUENCES: 3: CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, (
CITY: Gainesville
LENGTH: 3543 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US94/07902
                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTGACGTTTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAACAGTAGAGGTATTCCCAG 1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTATCTCAAAACTTGCATGCTCAAGATCATGATTGGATATGTGTTACGTGTGATTGCCA 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCCGCGGTACAACAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG 1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGAATTAATTTGCATGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGCA 3517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGGATTGTAATGGAAAGCAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGAGTTGCTTTGTATGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Country: US
Postal code/Zip:
Phone number: (6
Telex number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Street address:
City: San Diego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 State/Province:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Materials and Methods for 
Calliphoridae Pests
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PC/TUS9407902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SU
                                                                                                                                                                    MA79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (619)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92121
) 453-8030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4980 Carroll
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Suite A-1
                                                                                                                                                                                                                                                                                                                                    Version
                                                                                                                                                                                                                                                                                                                                    #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Canyon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the Control of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fax number: .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (619) 453-6991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3217
```

2570

476

2510

416

2450

2390

296

356

2330

2210

182

δ 밁 δ 밁 δ 밁 S 밁 ર્ 밁 Ş 日 S 8 ঠ 몽 ঠ 밁 ક 밁 ঠ 밁 ક 밁 ঠ 밁 S 밁 δ 밁 δ 문 ঠ 밁 S

1010 3038 2978

968

2918

2858

2798

2738

```
5
                                                                                                                                    밁
                                                                                                                                                      ঠ
                                                                                                                                                                                밁
                                                                                                                                                                                                              ર્
                                                                                                                                                                                                                                               뭐
                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                         중 유
                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 경 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPI
PCT-US94-07902-27
Ş
                           밁
                                                   ঠ
                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                           2618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2450
                                                                                                                                                                                                                                                                                                      2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2150
                                                                               2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2090 TTAATACATTTTATGCÁAATCCTATAAAAAACÁCTTTÁCÁATCÁGAACTTACAGATTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1050;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236
  950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N
                                                                                                                                                                                                                                                                   GAGAAGTAGATACAAATACAAATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATATACACGTTATCGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCAAAATGGAGACTTT-----TCTGGGAATGATTGGACATTCGGTAATGATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATAGATCAAGCCGCAAATCTTGTGGAATGTATTTCTGAAGAATTATATCCAAAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGTCCTATGTTTACAAGTAGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATG
  TGGTACAGTCGATTCCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACT 1009
                                             AACAAGA-----GTTACACTATCATATTACTTTAGATCATATTCAAAACGCTGATCGAC 949
                                                                                 CGGAPACACAACAAGCATATGATGTAGCGAAACAAGCCATTAATGCTTTATTCACAAATG
                                                                                                         GGGAAACACAAGCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATG 895
                                                                                                                                       CACTGTCACGCGTGAAACACATGGAGAAGAAATGGAACGATCAAATGGAAGCAAAACGTT
                                                                                                                                                      CATTGGCACATGTGAAACAAAAAGGAAAAGGAAATGGAAACACATGGAGAAAAAACGTT
                                                                                                                                                                                           ATGGATACGCATCATTAGATAATTTAGAAGTAATTGAAGAAGGGCCAATAGATGGGGAAG
                                                                                                                                                                                                           ATGGATACGCTACAGTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAG
                                                                                                                                                                                                                                                GGGCATTAGATACAAATGAAAATATAGGGGTTTGGGTCATGTTTAAAATATCTTCTCCAG
                                                                                                                                                                                                                                                                                                      CAGGGAAAAAGCATGTCGTATGTCAGGATTCCCATCAATTTAGTTTCACTATTGATACAG
                                                                                                                                                                                                                                                                                                                                TAGATAGAAAGCATGTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCG
                                                                                                                                                                                                                                                                                                                                                           CCGCTGTGCCGGCTAACATTGGGAACACTTCTGATATGTCGTATTCATGCCAATATGATA
                                                                                                                                                                                                                                                                                                                                                                                   TGCAGCCTAATCCTTCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTCACGCTATGGGGAAGAATTGATGCCATCATGAATGTTCCAGCTGATTTAAACTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAACACGTTACGGGAAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTTGGCCTATA 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTATACACGTTACCTAGTAAGGGGATTTGTAGGAAGTAGTAAAGATGTAGAACTAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATGGTACGATATTTCCGACCTATATATTCCAAAAATTGATGAATCAAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATATGGAACTCTATTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAAGAAGATGATCCTATTTTTAAAGGGCATTACCTTCATATGTCTGGGGCGAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGGATCCAATAATCCTATTTTTAAAGGAAAATTTTCTACAGATGCGTGGAGCACGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCAAAACGGGGATTTTGAATCGGCTACGCTTGGTTGGACAACAAGTGATAATATCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATGCTGTTATTAGATGAAGTTAAAAATGCGAAACAACTTAGTCAATCTCGAAATGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATAGATCAAGCGGCCATTTCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAA
                             TACAAGATGAGGCTTTACAGTTTGATACGACACTCGCTCAAATTCAGTACGCTGAGTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 763.8; DB 6;
Pred. No. 1.3e-183;
0; Mismatches 387;
                                                                                                                                                                                                                                                                                                                                                                                                                 -CTTTGATTGTGAAGGGTCTAATCGTTGTGAGACGT 2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 3543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                835
                                                                                                                                                                                                                                                                                                                                                                                      595
                                                                                                                                                                                                                                                                                                                                                                                                                                            535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2149
                                                                                                                                       2917
                                                                                                                                                                                           2857
                                                                                                                                                                                                                                                                           715
                                                                                                                                                                                                                                                                                                      2737
                                                                                                                                                                                                                                                                                                                                 655
                                                                                                                                                                                                                                                                                                                                                           2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                       775
                                                                                                                                                                                                                                                  2797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
              S
                                       밁
                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
 82 TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
```

```
US-10-089-678-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
US-10-089-678-2
                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: ASANO, Shinichiro
APPLICANT: ASANO, SHOTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROTEIN,
TITLE OF INVENTION: PROTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROTEIN,
TITLE OF INVENTION: NOXIOUS ORGANISM-CONTROLLING AGENT AND METHOD
TILE REFERENCE: 068821
CURRENT APPLICATION NUMBER: US/10/089,678
CURRENT FILING DATE: 2002-04-03
PRIOR APPLICATION NUMBER: JP 2000-236140
PRIOR APPLICATION NUMBER: JP 2000-236140
PRIOR APPLICATION NUMBER: PCT/JP01/06660
PRIOR FILING DATE: 2001-08-03
PRIOR PRIOR APPLICATION NUMBER: PCT/JP01/06660
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 3
                                             Query Match
Best Local Similarity
Matches 839; Conserv
                                                                                                                                                                                                                                                                                                                        SOFTWARE: PatentIn version 3.1 SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application Patent No. 6962977
                                                                                                                                                      ORGANISM: Bacillus thu
FEATURE:
NAME/KEY: exon
LOCATION: (1)..(3501)
OTHER IMFORMATION:
                                                                                                                                                                                                                                                                           LENGTH: 3504
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3038 TGGTACAATCGATTCCATATGTGTACAATGATTGTTGTTCAGATGTTCCAGGTATGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGATGTATATCAAGAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCAC 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACTTAAGTTCACTTCTTGCGAAGAAGGATATATGACAAAAAACAGTAGAGGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGTATCTCAAAAACTTGCATGCTCAAGATCATGATGGATATGTGTTACGTGTGATTGCCA 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCCGCGGTACAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGG
AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATACAGATCGTGTACGAATTGAGATAGGCGAAACCGAAGGTTCGTTTTATATCGAAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGACGTTTACGTCTTGTGAAGAAGGATATATTACGAAGACAGTAGATGTATTCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAAGAAGGACCTGGAAATGGGTATGTCACGCTTATGGATTGTGAGGAGAATCAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAAGAAGGACCTGGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAA 1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGTATCTCAAAATGTCCATCTCCAACATAATCATGGGTATGTCTTACGTGTTATTGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATATTATTAAAAATGGTGATTTTACACAAGGGGTAATGGGGGTGGCATGTAACTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATGTCATAACAAATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAA 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGATATCTATGTAGAGTTGGATGCACGAGTGGCACAAGCGCGTTATTTGTATGATACAA 3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGAATTAATTTGCATGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22.5%;
ilarity 56.7%;
Conservative
                                                                                                                                                                                                                                                        thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/10089678
                                               0
                                        Score 379; DB 3; Length 3504
Pred. No. 4.4e-86;
0; Mismatches 555; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3538
                                                                                     Length 3504;
                                                  87;
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3277
                                                  4.
```

AGTAAAAAAAGATGCCTTACAGACAAGTGTAACGGATTATCAAGTGAATCAAGCGGCAAAC

```
2923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              490
                                                       CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGAAAATACAGGAATTTGGGTCGTATTTAAAATTCCGACAACAAATGGATACGCAACA 2742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATATGTCTTCTGATTCCCATGCATTTTCTTTCCATATTGATACAGGTGAAATAGATTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTAATTCTGGTGTAGAAATGTCAGATATGTTGGCAGCCCAAAACCTTGTACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAACAAAAGGAAAAGAAATGGAAAACACATGGAGAAAAAACGTTGGGAAACACAACAA 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAAATCAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACTCCCTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAACTAAAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGAGTAAGAGGGTTTTGTGGGAAGTAGTAAAGATTTGAAATTTAATGGTAACACGTTACGGG 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAATGAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGAAAGAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAAT 2241
CAACTAAGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAA 3222
                                                                                                                                                          AATGGAGATTTTCGAAATGGATTAAGTGATTGGAATGCAACATCAGATGTGAATGTGCAA 3162
                                                                                                                                                                                                              AATGGTGACTTTACACAAGGATTACAGGGATGGCACCGCAACAGGAAATGCCGCGGGTACAA 1143
                                                                                                                                                                                                                                                                                                                         GAGTTAACAAATAGACTCCAACAAGCATGGAATTTGTATGATCTTCGAAATGCTATACCA 3102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAACAACAAGAACAATGGCAAGACAAAATGGCAAGAAAACGTGGGGCATCAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTAGGAAATCTTGAATTGGTAGAAGAGGGGCCATTGTCAGGGGAAACATTAGAACGAGCA 2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATACAAATGTAGGTATTGATGATCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCCAACGTATCTCTATCAACAAATAGATGAATCACTTTTAAAAACCATATACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGATTAATGGAGAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGCGGAAGGAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTACGTATATATGATGCGTTACCAGAAATCCCTGGAATGAACTATACGAGTTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATATIATGCAGCAAAGCAAGCCATTGATCGTTTATTCGCAGATTATCAAGACCAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGTAGAATGCCTATCCGATGAGTTATACCCAAATGAAAAACGAATGTTATGGGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTTGTGGTGGGATCGATCGCTGCAGTGAGCAACAGTATGT------2582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----AGACGCGAATTTAGCACTCGAAAACAATGGAGAAAATGGA 2622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 249
```

중 유

8 8 8 8 8 8 8 8 8

밁

유성

8 8 8 8 8

음 성

음 성

밁

중 음 중

음 성 음

5

음 성 음 성

```
δ
                                                                 밁
                                                                                                   ઇ
                                                                                                                                        밁
                                                                                                                                                                   δ
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 4
US-10-089-678-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-089-678-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: ASANO, Shinichiro
TITLE OF INVENTION: PROTEIN HAVING INSECTICIDAL ACTIVITY, DNA ENCODING THE PROTEIN,
TITLE OF INVENTION: NOXIOUS ORGANISM-CONTROLLING AGENT AND METHOD
FILE REFERENCE: Q68821
CURRENT APPLICATION NUMBER: US/10/089,678
CURRENT FILING DATE: 2002-04-03
PRIOR APPLICATION NUMBER: JP 2000-236140
PRIOR FILING DATE: 2000-08-03
PRIOR APPLICATION NUMBER: PCT/JP01/06660
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 3
SOFTWARE: Patentin version 3.1
SEQ ID NO 3
SOFTWARE: Patentin version 3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Application Patent No. 6962977 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 839;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 3690
TYPE: DNA
ORGANISM: Bacillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocal Similarity
                                                                                                                                          2428
                                                                                                                                                                                                                                                                                                                                                              2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1204
                                                                                                                                                                            202
                                                                                                                                                                                                                                                                                                                           82
                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                 ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT
                                                                                                                                                                                                                                                                                                                                                            AGTAAAAAAGATGCCTTACAGACAAGTGTAACGGATTATCAAGTGAATCAAGCGGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                              AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
TATCCAACGTATCTCTATCAACAAATAGATGAATCACTTTTAAAACCATATACAAGATAT
                      TTTCCAACCTATATCTGTCAAAAAATAGAGTGTGTAAATTAAAACCATATACACGTTAT 369
                                                                     CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                          AGGATTAATGGAGAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGCGGAAGGAGAT
                                                                                                                                                                            GGGAATGAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                  GTGAAAGAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAAT
                                                                                                                                                                                                                                                                                       TTAGTAGAATGCCTATCCGATGAGTTATACCCCAAATGAAAAACGAATGTTATGGGATGCA
                                                                                                                                                                                                                                                                                                                         TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAACATAGAAAGTGTAGAACTCGTGTTAGAAGAAGAGTA 3503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATGTGATGATGATACAGGTGTTTTATCTGCTGATCAAACTAGCTATATCACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTGCGAAGAAG------GATATATGACAAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTACAGTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TIGCATGCTCAAGATCATGATATGTGTTACGTGTGATTGCCAAAAAAGAAGGACCT 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                   22.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/10089678
                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches 555; Indels 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 379; DB 3;
Pred. No. 4.5e-86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3690;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                249
                                                                                                                                                                                                                   2427
                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                              2307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1353
 2607
                                                                       2547
                                                                                                                                                                                                                                                                                                                                                                                                  81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1413
                                                                                                                                                                                                                                                                                                                                                                                                                                     4
```

Ş

```
3169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3049
                                                                                                                                                                                                                                                                                                                                                                                                                                        3409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2809
1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAAACACAACAA 849
                                                                                                                                                                                        ATATGTGATGATGATACAGGTGTTTTATCTGCTGATCAAACTAGCTATATCACAAAAACA
                                                                                                                                                                                                                                                   TCTTGCGAAGAAG----
                                                                                                                                                                                                                                                                                                                                                                   GGAAAAGGGTATGTAACGATGATGGATGTAATGGAAAGCAGGAAACACTTAAGTTCACT 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACTAAGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAA 3408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGAGATTTTCGAAATGGATTAAGTGATTGGAATGCAACATCAGATGTGAATGTGCAA 3348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGTTAACAAATAGACTCCAACAAGCATGGAATTTGTATGATCTTCGAAATGCTATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTACGTATATAATGATGCGTTACCAGAAATCCCTGGAATGAACTATACGAGTTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTAATTCTGGTGTAGAAATGTCAGATATGTTGGCAGCCCAAAACCTTGTACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT 963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCATATTATGCAGCAAAGCCATTGATCGTTTATTCGCAGATTATCAAGACCAAAAA 3108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAACAACAAGAACAACAATGGCAAGACAAAATGGCAAGAAAAACGTGGGGGCATCAGAAAAA 3048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTAGGAAATCTTGAATTGGTAGAAGAGGGGCCATTGTCAGGGGAAACATTAGAACGAGCA 2988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGAAAATACAGGAATTTGGGTCGTATTTAAAATTCCGACAACAATGGATACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATACAAATGTAGGTATTGATGATCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATATGTCTTCTGATTCCCATGCATTTTCTTTCCATATTGATACAGGTGAAATAGATTTG 2868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAAGTGTCACGATCGATCCATTTGATTTTCATATTTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAATCAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACTCCCTGTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACTAAAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                      GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACA 1413
                                                                                                                                                                                                                                                                                                           TTTACAGTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGAGTA 3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -----AGACGCGAATTTAGCACTCGAAAACAATGGAGAAATGGA 2808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTGTGGTGGGATCGATCGCTGCAGTGAGCAACAGTATGT-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
TTTTATATAGATAGCATCGAGTTGCTTTGTATGCAAGGATA 1454
                                                              ----- GATATATGACAAAAACA 1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                              3648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2667
```

ঠ 밁 S 밁 8 밁 ð 밁 S 당 S 밁 ર્શ ₽ Ś 밁 8

8 8 8 8

8 8 8 8 8 8 8 8 8 8 8 8

음 성 음

S

```
S
                                                     밁
                                                                                á
                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
US-07-915-203-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                  밁
                                                                                                                                                                                                                                                   US-07-915-203-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Ohba, M
APPLICANT: Iwahana
APPLICANT: Sato, R
APPLICANT: Suzuki,
APPLICANT: Suzuki,
APPLICANT: Sakanak
                                                                                                                                                                              Query Match 21.2%;
Best Local Similarity 56.8%;
Matches 754; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application Patent No. 5359048
                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: 904-375-8100
TELEPAX: 904-372-5800
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 3797 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/07/915,203
APPLICATION NUMBER: US/07/915,203
APPLICATION: 1920723
CLASSIFICATION: 1920723
CLASSIFICATION: 1920723
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: M/K 301
TELECOMMUNICATION INFORMATION:
TELEPHONE: 904-375-0100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Asano, snouj.
APPLICANT: Kawasugi, Tadaaki
APPLICANT Kawasugi, Tadaaki
TITLE OF INVENTION: No. 5359048el Microorganism and Insecticide
                                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                 NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Gainesville
STATE: FL
                                                                                                                                                                                                                                                                                                               STRAIN: japonensis
INDIVIDUAL ISOLATE: Buibui
                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: SIR
                                                                                                                                                                                                                                                                                                                                               ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3649
148 CTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCTGGGAAT
                                                                                                                                                 28 AAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTATA 87
                                                                                                                                                                                                                                                                                                                                                                                                                                NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FL
                                                                                  GAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAAAA 147
                                                                                                                  TTCAACATAGAAAGTGTAGAACTCGTGTTAGAAGAAGAGTA
                                                     GAATGCCTATCCGATGAGTTATACCCCAAATGAAAAACGAATGTTATGGGATGCAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hori, Hidetaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Suzuki, No. 5359048ukazu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Iwahana, Hidenori
Sato, Reiichi
                                                                                                                                                                                                                                                                                                                                                 Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sakanaka, Kazunobu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ogiwara, Katsutosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ohba, Michio
                                                                                                                                                                                                                                                                 CDS
187..3636
                                                                                                                                                                                                                                                                                                                                                                                DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/07915203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/07/915,203
                                                                                                                                                                                Score 357.4; DB 2;
Pred. No. 1.4e-80;
0; Mismatches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Suite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A-1
                                                                                                                                                                                                                 Length 3797;
                                                                                                                                                                                   Indels
                                                                                                                                                                                   57;
                                                                                                                                                                                  Gaps
                                                                                                                      2292
                                                      2352
```

```
3034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2914 AATCTTGAATTTGTAGAAGAGGGGCCATTGTCAGGGGÄÄACATTAGAATGGGCCCÄACAÄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2854 AATACAGGAATTTGGATCGTATTTAAAATTCCGACAACAATGGAAACGCAACACTAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2653 CAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACGCCCTGTCAATTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               256
                                    GCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGGACCTGGAAAA 1269
                                                                                                            AGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAATTTACA 3393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGCAGCAAAGCCAATGATCGTTTATTCGCAGATTATCAAGACCAAAAACTTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACACTATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGAACAACAATGGCAAGACAAAATGGCAAGAAAACGTGCAGCATCAGAAAAAAACATAT
GTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGAGTAGGAGAC 3453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGGTGTAGAAATGTCAGATTTGTTGGCAGCCCAAAACCTTGTACAGTCCATTCCTTAC 3153
                                                                                                                                                                     GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAATAGGATT
                                                                                                                                                                                                                                 GATTTTCGAAATGGATTAAGTAATTGGAATGCAACATCAGATGTAAATGTGCAACAACTA
                                                                                                                                                                                                                                                                                        GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATG
                                                                                                                                                                                                                                                                                                                                                                                                          AACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGT 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATATAATGATGCGTTACCGGAAATCCCTGGAATGAACTATACGAGTTTACAGAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAAAACACAACAAGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGG 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAATACA 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGGAGAAATGGAAATATGTCTTCT------------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGGAGTCGATCGCTGCAGTGAACAACAGTATGTAGACGCGAATTTAGCACTCGAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACA 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGGGCAAAT 2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGTATCTCTATCAACAAATAGATGAATCGCTTTTAAAACCATATACAAGATATAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTAĀĀĠATCGTTCGCTTCGTTTGACAAGTGCGAGĀGĀGĀTTGĀTACĀGAĀACĀTĀTCCĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGGAGAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGTGGAAGGAGATGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 2913
                                                                                                                                                                        1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                3213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2799
```

```
RESULT 6
US-08-272-887-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                  ;
US-08-272-887-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, App-
                                 Query Match
                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/272,887

FILING DATE: 08-JUL-1994

CLASSIFICATION: 800

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/915,203

FILING DATE: 23-JUL-1992

ATTORNEY/AGENT INFORMATION:

NAME: Saliwanchik, David R.

REGISTRATION NUMBER: 31,794

REFERENCE/DOCKET NUMBER: M/K 301
                                                                                                                                                                                                                                                                                          TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                              MOLECULE TYPE: DNA (9)
ORIGINAL SOURCE:
ORGANISM: Bacillus (
STRAIN: japonensis
INDIVIDUAL ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 32606
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Kawasugi, Tadaaki
TITLE OF INVENTION: No. 5747450el Microorganism and Insecticide
NIMMERR OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                         TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, Suite A-1
CITY: Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: U
                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3514 GATGATG 3520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3454 GGATATGTGATCATCCGTGATGGTGCAAATCAGACAGAAACACTCACATTTAATATATGT 3513
                                                                                                                                                                                                                                           H: 3797 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08272887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hori, Hidetaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Iwahana, Hidenori
Sato, Reiichi
Suzuki, No. 5747450ukazu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sakanaka, Kazunobu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ogiwara, Katsutosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ohba, Michio
                                                                                CDS
187..3636
                                                                                                                                                              Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Asano, Shouji
                                                                                                                                                                                                              linear
                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                             single
                21.2%;
                                                                                                                                  Buibui
                                                                                                                                                                                                                                                                                             بر
Score 357.4; DB 2;
Pred. No. 1.4e-80;
0; Mismatches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #1.25
                                 Length 3797;
```

Best Local Similarity Matches 754; Conserv

Conservative

Ş В S 밁 ঠ 밁 δ 밁 ঠ 밁 5 밁 ঠ 밁 ş 밁 ঠ 밁 Ş 밁 Ś 밁 ð 밁 S 밁 Ś 밁 S 밁 Ś 밁 ঠ 멍 δ ğ

Indels 57;

Gaps

ş

ફ

유 성 유

문

```
3034
                          1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                 970
                                                                                                                                                                                                                                                                                      916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148
GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAACAATG 1149
                                                                                                                                                                                                                                                                    ATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATATAATGATGCGTTACCGGAAATCCCTGGAATGAACTATACGAGTTTTACAGAGTTA
                                                                                                                                                                                            GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA 1029
                                                                                                                                                                                                                                            TCTGGTGTAGAAATGTCAGATTTGTTGGCAGCCCAAAACCTTGTACAGTCCATTCCTTAC
                                                                                                                                                                                                                                                                                                                             TATGCAGCAAAGCCAATGATCGTTTATTCGCAGATTATCAAGACCAAAAACTTAAT
                                                                                                                                                                                                                                                                                                                                                                     GATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACACTATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGAACAATGGCAAGACAAAATGGCAAGAAAACGTGCAGCATCAGAAAAAACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGAAAAAGGAAACAACACATGGAGAAAAAACGTTGGGAAACACAACAAGCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATCTTGAATTTGTAGAAGAGGGGCCATTGTCAGGGGAAACATTAGAATGGGCCCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATACAGGAATTTGGATCGTATTTAAAATTCCGACAACAATGGAAACGCAACACTAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGAGAAATGGAAATATGTCTTCT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGGAGTCGATCGCTGCAGTGAACAACAGTATGTAGACGCGAATTTAGCACTCGAAAAC 2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACA 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACGCCCTGTCAATTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGGGCAAAT 2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGGAAAGAA 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACGTATCTCTATCAACAAATAGATGAATCGCTTTTAAAAACCATATACAAGATATAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTCCA 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ANTIGGAGAAAAACGGATGGACGGGAAGTACGGGAATCGAGGTTGTGGAAGGAGATGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGCGAAACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAATAGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCTGGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAATGCCTATCCGATGAGTTATACCCAAATGAAAAAACGAATGTTATGGGATGCAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAAAA 147
                                                                                            AACGCACGTATCATGCAAGGTTATAATTTTATATGATGCACGAAATGTCATAACAAATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -TGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTATT
                                                                                                                                                                                                                                                                                                                               3093
                                                                                                                                                                                                                                                                                                                                                                       915
                                                                                                                                                                                                                                                                                                                                                                                                                                                           855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207
                                                                                                                                                      3213
                                                                                                                                                                                                                                         3153
                                                                                                                                                                                                                                                                                                                                                                                                                  3033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3334
```

중 유

δ

유

밁

유 성

음 성 음

성 유

중 음 중 음

8 8 8 8 8 8

8 8 8 8

japonensis

```
RESULT 7
US-08-789-449-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/08789449
                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/272,887
FILING DATE: 08-JUL-1994
APPLICATION NUMBER: US 07/915,203
FILING DATE: 23-JUL-1992
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. 5824878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Ohba,
                                                                                                                                                                TELEFAX: 904-372-5800 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Hori, Hidetaki
APPLICANT: Asano, Shouji
APPLICANT: Kawasugi, Tadaaki
TITLE OF INVENTION: No. 5824878el Microorganism and Insecticide
NUMBER OF SEQUENCES: 2
  MOLECULE TYPE:
ORIGINAL SOURCE:
ORGANISM: Bac
                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                      TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PATENTIN Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 32606
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: David R. Saliwanchik
STREET: 2421 N. M. 41st Street, Suite
CITY: Gainesville
                                                           TYPE: nucleic
STRANDEDNESS:
TOPOLOGY: lin
                                                                                                                                                                                                                                              REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: M/K 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: U
                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3274 GATTTTCGAAATGGATTAAGTAATTGGAATGCAACATCAGATGTAAATGTGCAACAACTA 333
                                                                                                 nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGATG 3520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGGACCTGGAAAA 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCAT 1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATATGTGATCATCCGTGATGGTGCAAATCAGACAGAAACACTCACATTTAATATATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGGAGTAGGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAATTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŧ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Suzuki, No. 5824878ukazu
Ogiwara, Katsutoshi
Sakanaka, Kazunobu
Hori, Hidetaki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Iwahana, Hidenori
Sato, Reiichi
Bacillus thuringiensis
                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ohba, Michio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Floppy disk
                                          DNA (genomic)
                                                                                single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/789,449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3513
```

```
S
                                                                     밁
                                                                                                   ঠ
                                                                                                                                           밁
                                                                                                                                                                     S
                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-789-449-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INDIVIDUAL FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local 51...
                                                                                                                                                                                                                                                                                                                                                                                                                                         2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2233 ANAGATGCCTTACAGACAAGTGTAACGGATTATCAAGTCAAGCGAAACTTAATA
                                                                                                                                                                              796
                                                                                                                                                                                                                                                                                                                             676
                                                                                                                                                                                                                                                                                                                                                                                                   616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28 AAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 h 21.2%;
Similarity 56.8%;
54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGGCGANACGACTTGTTCAGGCACGTAACTTACTCCAAGATACAGGCTTTAATAGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAATGCCTATCCGATGAGTTATACCCCAAATGAAAAACGAATGTTATGGGATGCAGTGAAA
TCTGGTGTAGAAATGTCAGATTTGTTGGCAGCCCAAAACCTTGTACAGTCCATTCCTTAC
                      ATTACTITAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTAT
                                                                       TATGCAGCAAAGCCAAGCCATTGATCGTTTATTCGCAGATTATCAAGACCAAAAACTTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAATCGTCAAAAATGTACCAGATAATCTCTTGCCAGATGTACGCCCTGTCAATTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGGAGAAAACGGATGGACGGAAGTACGGGAATCGAGGTTGTGGAAGGAGATGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGCAAAACCAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCTGGGAAT
                                                                                                                                           CAAGAACAATGGCAAGACAAAATGGCAAGAAAACGTGCAGCATCAGAAAAAACATAT
                                                                                                                                                                              AAGGAAAAGAAATGGAAACAACACATGGAGAAAAAAAACGTTGGGAAACACAAGCCTAT
                                                                                                                                                                                                                                                                                                              AATGTAGGTATTGATGTCTTATTAAAAATTTTCTAATCCAGATGGATACGCTACAGTAGGG
                                                                                                                                                                                                                                                                                                                                                                                    TGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACAAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGGAGAAAATGGAAATATGTCTTCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGATATGCTCCCGATATGTATGCATGCCCCGCAAAATATAGAATAGAAAGCATGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĠĠŦĠĠAĠŦĊĠAŦĊĠĊŦĠĊAĠŦĠAAĊAĊĀĠŤĀŤĠŤAĠAĊĠĊĠAAŦŤŦAĠĊAĊŦĊĠAĀĀAĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAT-----TGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAAAA 147
                                                                                                         GATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACACTATCAT
                                                                                                                                                                                                                                                      AATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAA
                                                                                                                                                                                                                                                                                          AATACAGGAATTTGGATCGTATTTAAAATTCCGACAACAAATGGAAACGCAACACTAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAGGTTTTATAGGAAGTAGTCAAGATTTAGAGATTAAATTAATACGTCATCGGGCAAAT 2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGTATCTCTATCAACAAATAGATGAATCGCTTTTAAAACCATATACAAGATATAAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTA 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTATTTCCA
                                                                                                                                                                                                                                                                                                                                                                 ISOLATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
187..3636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Buibui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 357.4; DB 2;
Pred. No. 1.4e-80;
0; Mismatches 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                      795
                                 969
                                                                       3093
                                                                                                                                                                                                                                                                                          2913
                                                                                                                                                                                                                                                                                                                             735
                                                                                                                                                                                                                                                                                                                                                                 2853
                                                                                                                                                                                                                                                                                                                                                                                                   675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2292
                                                                                                       915
                                                                                                                                                                              855
                                                                                                                                                                                                                                                                                                                                                                                                                                       2799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
US-07-876-280-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 29, Application Patent No. 5262158
GENERAL INFORMATION:
                                                                                                     TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 3471 base pairs
                                                                                                                                                                         CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/876
FILING DATE: 19920430
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: W/S
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 1070-8100
MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 32606
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPATIBLE
COMPUTER: PC-DOS/MS-DOS
COETTANTS DATASTA PG-106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Payne, Jewel M.
APPLICANT: Cannon, Raymond J.C.
APPLICANT: Bagley, Angela L.
TITLE OF INVENTION: No. 5262158el Bacillus thuringiensis Isolates
TITLE OF INVENTION: Controlling Acarides
NUMBER OF SEQUENCES: 30
CORRESPONDENCE ADDRESS:
ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, Suite A-1
                                                TYPE: NUCLEIC ACID STRANDEDNESS: doub TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3514 GATGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3154 GTATATAATGATGCGTTACCGGAAATCCCTGGAATGAACTATACGAGTTTTACAGAGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCAT 1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTA 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGC 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTCAACCGAATTATAGATATGTGTTACGTGTCACAGCGAGAAAAGAGGGAGTAGGAGAC 3453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAGAAGAAGAACCTGGAAAAA 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCGATACATCTGTCCTTGTCATTCCAAACTGGAATTCTCAAGTGTCACAACAATTTACA 3393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATG 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAATAGACTCCAACAAGCATGGAATTTGTATGATCTTCAAAACGCTATACCAAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGT 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGATATGTGATCATCCGTGATGGTGCAAATCAGACAGAAAACACTCACATTTAATATATGT 3513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATTTTCGAAATGGATTAAGTAATTGGAATGCAACATCAGATGTAAATGTGCAACAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ŧ
                  ğ
                                 DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/07876280
                                                                                                                                                                                                                                                                                                                             US/07/876,280
                                                                                                                                                                                                                      ×/s
                                                                                                                                                                                                                      104
                                                                                                                                                                                                                                                                                                                                                               Version
```

for

#1.25

```
S
                                                                                                                                                                         В
                                                                                                                                                                                                               र्
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                        ঠ
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGINAL SOURCE:
; ORGANISM: Bacillus thuringiensis
; STRAIN: kumamotoensis
; INDIVIDUAL ISOLATE: PS50C
; IMMEDIATE SOURCE:
; CLONE: E. coli NM522 (pMYC2320) NRRL B-18769
US-07-876-280-29
                           В
                                                                 ঠ
                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2110
                                                                                                                                                                                                                                                                                                                                                                                                                  2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2506
                                                                                                                                                                                                                                                                                                   670
                                                                                                                                                                                                                                                                                                                                                                              610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    815;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATACAAAAGATGGCTTACGACCAGGTGTAACGGATTATGAAGTAAATCAAGCGGCAAAC
                                   AGATACATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAACAA 2892
                                                                                                                                               AAACAAAAGGAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAAACACAACAA 849
                                                                                                                                                                                                             GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATACGCAACA
                                                                                                                                                                                                                                                                                      AATACAAATGTAGGTATTGATGTCTTAATAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAAAGTATGTGAATAGCCGTTTAGAAGGAGAAAACCG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAACGAATCGAATTGTAAAGAATGTACCAGATGATTTA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGACTGAGAGGGTTTGTGGGAAGTAGTCAAGGATTAGAAATTTATACGATACGTCAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCCAACCTATATCTGTCAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGTATTTAAAGGACGTTATCTACGCCTACCAGGTGCACGAGAAATTGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGATAAACGGAGAAAATGGATGGGCGGCAAGTACGGGAATTGAGATTGTAGAAGGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGG-----AATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAGAGAGGCAAAAACGCCTCAGTGGGGCACGTAACTTACTACAAGATCCAGATTTCCAA 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGTGGAATGCCTATCGGATGATTTATATCCAAATGAAAAACGATTGTTATTTGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
TATCATATTACTTTAGATCATA-----TTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                        GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                              CAMAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAGACAGATAGA
                                                                                                                                                                                     CTTGGAAATCTTGAATTAGTCGAAGAGGGACCTTTGTCAGGAGACGCATTAGAGCGCTTG
                                                                                                                                                                                                                                                                                                                                         ----TTCTGGTGATGCACATGAGTTCTCGCTCCCTATCGATATAGGAGAGCTGGATTAC
                                                                                                                                                                                                                                                                                                                                                                        GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -TTGCCAGATGTATCTCCTGTAAACTCTGATGGCAGTAT----CAATCGATGCAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 311.8; DB 2;
Pred. No. 4.8e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105;
                                                                                                                                                                                                                                                                2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                       609
                                                                        909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 9
US-07-812-180A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/07812180A Patent No. 5366892
                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS 5.0
SOFTWARE: PatentIn Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/812,180A
FILLING DATE: 19920102
CLASSIFICATION: 435
ATTORNEY/ACENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:

APPLICANT: Foncerrada, Luis R

APPLICANT: Payne, Jewel M

APPLICANT: Sick, August J

TITLE OF INVENTION: No. 5366892el Coleopteran-Active Bacillus

TITLE OF INVENTION: thuringiensis Isolate and a No. 5366892el

TITLE OF INVENTION: Coleopteran-Active Toxin
               NAME: Saliwanchik, Roman TELECOMMUNICATION INFORMATION TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Roman Saliwanchik
STREET: 2421 N.W. 41st Stree
                                                                                                                                                                                                                                                        STREET: 2421 N.W. CITY: Gainesville
STATE: FL
COUNTRY: USA
ZIP: 32606
                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCTCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTATATAGATAGCATCGAGTTGCTT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAAACCGAAGGTACA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCTATATAGAAAGTGTAGAATTGATT 3459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGACATTCATCCCGTATACAGATCAAATGTGGATTGAAATAAGTGAAACAGAAGGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGCGATTATGATACAAATGGTGTGTATAATGACCAAACCGGCTATATCACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTGCG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTACAGTTCAACCGAATCAAAGATATGTATTACGAGTTACTGCAAGAAAAGAAGGGGGTA 3252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAÁATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGGATGAACAAGTTTCACAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAATTAACAGATCGACTCCAACAAGCGTGGAATTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                         Street,
                                                                                                                                                                                                                                                                                                                                         Ste
                                                                                                                                                                                                                                                                                                                                         A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---AAGAAGGATATATGACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                      5366892el Gene Encoding
```

3312

3372

3432

1143

3192 1203 3132 3072

```
S
                                           밁
                                                                 Ş
                                                                                                   유
                                                                                                                         ঠ
                                                                                                                                                   밁
                                                                                                                                                                                ঠ
                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                 र्
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Bacillus thuringie
STRAIN: kumamotoensis
INDIVIDUAL ISOLATE: PS50C
IMMEDIATE SOURCE:
LIBRARY: LAMBDAGEM (TM) - 11
LIBRARY: FONCERRADA
CLONE: 50C
US-07-812-180A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18.5%;
Local Similarity 55.6%;
1es 815; Conservaring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: don TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                           2467
                                                                                                                                                                                                                                                                                                                                                                                                                                                2290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2050 AATACAAAAGATGGCTTACGACCAGGTGTAACGGATTATGAAGTAAATCAAGCGGCAAAC
                                                                                                                                                                                                                                               490
                                                                                                                                                                                                                                                                                                                                                             370
                 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22 AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H: 3471 base pairs
GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGÁGAGAGAGAAAACGCCTCÁGTGGGGCACGTAACTTÁCTACAAGATCCAGATTTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGG------AATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                            NATGANAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATACGCAACA
                                                                                                                                                            ACAAAAGTATGTGAATAGCCGTTTAGAAGGAGAAAACCG---
                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCAACCTATATCTGTCAAAAAATAGAGTCTAAATTAAAACCCATATACACGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTATTTAAAGGACGTTATCTACGCCTACCAGGTGCACGAGAAATTGATACGGAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGATAAACGGAGAAAATGGATGGGCGGCAAGTACGGGAATTGAGATTGTAGAAGGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT
                                                                       AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                               GTGAAGTGTCACGATCGTCATCTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                      -TTGCCAGATGTATCTCCTGTAAACTCTGATGGCAGTAT----CAATCGATGCAGCGA
                                                                                                                                                                                                                                             TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                           CAMACGMATCGMATTGTMAAGMATGTACCAGATGATTTA--
                                                                                                                                                                                                                                                                                                    AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT
                                                                                                                                                                                                                                                                                                                                  AGACTGAGAGGGTTTGTGGGAAGTAGTCAAGGATTAGAAATTTATACGATACGTCAC---
                                                                                                                                                                                                                                                                                                                                                           CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG
                                                                                                                                                                                                                                                                                                                                                                                         TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGTGGAATGCCTATCGGATGATTTATATCCAAATGAAAAACGATTGTTATTTGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA
                                                                                                   ----TTCTGGTGÄTGCACATGAGTTCTCGCTCCCTATCGATATAGGÄGÄGCTGGÄTTAC 2652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 311.8; DB 2;
Pred. No. 4.8e-69;
0; Mismatches 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIBRARY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                     369
                                            2712
                                                                                                                                                                                                                                               549
                                                                                                                                                                                                                                                                                                       489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2109
                789
                                                                                                                                                                                                                                                                                                                                                             429
                                                                                                                                                                                                                                                                                                                                                                                         2409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
```

```
3433
                                                                                                  3373
                                                                                                                                                                                                    3313
                                                                                                                                                                                                                                                          1324
                                                                                                                                                                                                                                                                                                          3253
                                                                                                                                                                                                                                                                                                                                                         1264
                                                                                                                                                                                                                                                                                                                                                                                                            3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCTCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGATACATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACAAAAGGAAAAGGAAATGGAAACAACACATGGAGAAAAAAACGTTGGGAAACACAACAA 849
                                  TTTTATAGATAGCATCGAGTTGCTT 1440
                                                                                                                                  GTAGAGGTATTCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACA 1413
                                                                                                                                                                                                    GCAAGCGATTATGATACAAATGGTGTGTATAATGACCAAAACCGGCTATATCACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CANATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 120:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATTAACAGATCGACTCCAACAAGCGTGGAATTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAGACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTGGAAATCTTGAATTAGTCGAAGAGGGACCTTTGTCAGGAGACGCATTAGAGCGCTTG 2772
TTCTATATAGAAAGTGTAGAATTGATT
                                                                                                  GTGACATTCATCCCGTATACAGATCAAATGTGGATTGAAATAAGTGAAACAGAAGGTACG
                                                                                                                                                                                                                                                                                                            GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT 126:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CANATCATTCATACATCTGTCCTTGTGATTCCANACTGGGATGAACAAGTTTCACAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCATATTACTTTAGATCATA-----TTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                            TTTACAGTTCAACCGAATCAAAGATATGTATTACGAGTTACTGCAAGAAAAAAAGAAGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                          AAGAAGGATATGACAAAAACA 1353
                                                                                                     3432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1023
                                                                                                                                                                                                       3372
                                                                                                                                                                                                                                                                                                            3312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                963
```

US-08-315-468-1
US-08-315-468-1
Sequence 1, Application US/08315468
Fatent No. 5554534
GENERAL INFORMATION:
APPLICANT: Michaels, Tracy Ellis
APPLICANT: Foncerrada, Luis
APPLICANT: Narva, Kenneth E.
TITLE OF INVENTION: Process for Controlling Scarab Pests
TITLE OF INVENTION: with Bacillus thuringiensis Isolates
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, Suite A-1
CITY: Gainseville
STATE: FL
COUNTRY: USA
ZIP: 32606
COMPUTER READABLE FORM:
MEDIUM TYPE: Flappy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

```
US-08-315-468-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 07/808,316
PILING DATE: 16-DEC-1991
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: MA73.C2
TELECOMMUNICATION INFORMATION:
TELEPHONE: 904-375-8100
TELEPHONE: 904-375-8100
TELEPAX: 904-375-8100
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 3471 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INDIVIDUAL ISOLATE: PS50C
IMMEDIATE SOURCE:
LIBRARY: LAMEDAGEM (TM) -
LIBRARY: FONCERRADA
CLONE: 50C(a)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/315 17 CLASSIFT CLASSIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGINAL SOURCE:
ORGANISM: Bacillus the
STRAIN: kumamotoensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 01 FEB 1993
APPLICATION NUMBER: 07/828,430
FILING DATE: 30-JAN-1992
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
FILING DATE: 01 FEB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: 11
2410
                                                                                                                                                                                                                                                                                                               2230
                                                                                                                                                                                                                                                                                                                                                                                                                     2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2050
                                                                                                     2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  142
                                                                                                                                                      310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               815;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           82
                                  CGAGTAAGAGGGTTTTGTGGGAAGTAGTAAAGATTTGAAATTTAATGGTAACACGTTACGGG 429
                                                                                                        TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAACCATACACAAGATAT
                                                                                                                                                      TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT
                                                                                                                                                                                                           GCTGTATTTAÑAĞĞACGTTATCTACGCCTACCAĞĞTĞCACĞAĞAAATTGATACGGAAACG
                                                                                                                                                                                                                                            CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309
                                                                                                                                                                                                                                                                                                               GAGATAAACGGAGAAAATGGATGGGCGCCAAGTACGGGAATTGAGATTGTAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                               GGG-----AATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                  GTGÁGAGAGGCAAAAACGCCTCAGTGGGGCACGTAACTTACTACAAGATCCAGATTTCCAA 2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGTGGAATGCCTATCGGATGATTTATATCCAAATGAAAAACGATTGTTATTTGATGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAA 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATACAAAAGATGGCTTACGACCAĞGTGTAACGGATTATGAAGTAAATCAAGCGGCAAAC 2109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT
  AGACTGAGAGGGTTTGTGGGAAGTAGTCAAGGATTAGAAATTTATACGATACGTCAC---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/014,941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 311.8; DB 2;
Pred. No. 4.8e-69;
0; Mismatches 547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LIBRARY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LUIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3471;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201
                                                                                                                                                                                                           2349
                                                                                                                                                                                                                                                                                                               2289
                                                                                                                                                                                                                                                                                                                                                                  249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
  2466
                                                                                                                           밁
                                                                                                                                                                         Ś
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3133
                                                                             1414
                                                                                                                              3373
                                                                                                                                                                                   1354
                                                                                                                                                                                                                                      3313
                                                                                                                                                                                                                                                                                       1324
                                                                                                                                                                                                                                                                                                                                          3253
                                                                                                                                                                                                                                                                                                                                                                                          1264
                                                                                                                                                                                                                                                                                                                                                                                                                                             3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC
                                                                             TTTTATATAGATAGCATCGAGTTGCTT 1440
                                                                                                                                                                                                                                                                                                                                                                                  GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CANATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAATTAACAGATCGACTCCAACAAGCGTGGAATTTGTATGATCAGCGAAATGCCATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTACGTATATAACGAAATGTTCCCAGAAATACCAGGGATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAATCCTGATGTAGAGATTACAGATCTTACTGCGGCTCAAGATCTGATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATCATATTACTTTAGATCATA-----TTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATACATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAACAA 2892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAGAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAGACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAAAAGTATGTGAATAGCCCGTTTAGAAGGAGAAAACCG------
                             TTCTATATAGAAAGTGTAGAATTGATT 3459
                                                                                                                                GTGACATTCATCCCGTATACAGATCAAATGTGGATTGAAATAAGTGAAACAGAAGGTACG
                                                                                                                                                                              GTAGAGGTATTCCCCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACA 1413
                                                                                                                                                                                                                                    GCAAGCGATTATGATACAAATGGTGTGTATAATGACCAAACCGGCTATATCACAAAAACA
                                                                                                                                                                                                                                                                                         TCTTGCG-----
                                                                                                                                                                                                                                                                                                                                       ĠĠĀĀĀTĠĠĀŤĀŤĠŤĀĀGTĀŤTCGTĠĀŤĠĠŤĠĠĀĀĀTCĀĀTCĀĞĀĀĀĊĠĆŤŤĀCTŤTTĀĠŤ
                                                                                                                                                                                                                                                                                                                                                                                                                                          ттесатестсалеатсатеалатететтасететелтесслалалаланевасет
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAATCAATCATACATCTGTCCTTGTGATTCCAAACTGGGGATGAACAAGTTTCACAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGGTGATTTTCGAAATGGGTTAAGTAATTGGAATGCAACGCCTGGCGTAGAAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTGGAAATCTTGAATTAGTCGAAGAGGGACCTTTGTCAGGAGACGCATTAGAGCGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAAGTGTCACGATCGATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -TTGCCAGATGTATCTCCTGTAAACTCTGATGGCAGTAT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----TTCTGGTGATGCACATGAGTTCTCGCTCCCTATCGATATAGGAGAGCTGGATTAC
                                                                                                                                                                                                                                                                                    - AAGAAGGATATATGACAAAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAATCGATGCAGCGA
                                                                                                                                                                                                                                                                                         1353
                                                                                                                                                                                                                                                                                                                                                                                               1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        549
                                                                                                                                   3432
                                                                                                                                                                                                                                                                                                                                            3312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2652
                                                                                                                                                                                                                                         3372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            909
```

ठ 밁 S 밁 Ş 밁 S 밁 Ś 밁 ş

ફ 밁 S 밁

430

AAAGAAATTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT

489

RESULT 11 US-07-941-650A-1

Qy 22 AGTACGAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81	US-07-941-650A-1 Query Match 18.5%; Score 311.8; DB 3; Length 3471; Best Local Similarity 55.6%; Pred. No. 4.8e-69; Matches 815; Conservative 0; Mismatches 547; Indels 105; Gaps 7;	ORGANISM STRAIN: INDIVIDU IMMEDIATE CLONE:	E NO	; STRANDEDNESS: double ; STRANDENESS: double ; TOPOLOGY: linear	E E 53	E C 1 2	CATION NUMBER: US 07 CATION NUMBER: US 07 CATE: 16-JAN-1991 Y/AGENT INFORMATION:	PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/658,935 FILING DATE: 21-FEB-1991	; FILLING DALE: 1970000; CLASSIFICATION: 435 ; PRIOR APPLICATION DATA: ; APPLICATION NUMBER: US 07/758,020 . FILLING DATE: 12.5EPD.1001	SOFTWARE: Patentin Release #1.0, Version #1.25; CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/941,650A	2558	Gainesville FL : USA 2606	SEQUENCES: 7 SERVE ADDRESS: 7 E: David R. Saliwanchik 2421 N.W. 41st Street, Suite A-1	2 \ \ \ \ \ \	; Sequence 1, Application US/07941650A
B	8 8 8	B & B	5 5 5	3 8	9d 6	ያ ያ	유 장	β Q	A 4	B &	B &	дь Q2	B 6	<u>ያ</u> ላ	DЬ
3073 AATGGTGATTTTCGAAATGGGTTAAGTAATTGAAATGCAACGCCTGGCGTAGAAGTACAA 3132 1144 CAAATGGATGTGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203 1144 CAAATGAATCAACATCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203 1133 CAAATCAATCATACATCATCCTTGTGATTCCAAAACTGGATGAACAAGTTCCAAAACAG 3192 1204 TTGCATGCTCAAGATCATCATGGATATGTGTTTACGTGGATTGCCAAAAAAAA	1024 GAGITIAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083	2893 CHGAAICCIGAIGHAGAGAITACAGAICHACIGGCICAAGAICHGAIACAGICCAII 2992 964 CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023	10 TATCATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATT	850 GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAAATGAACAAGAGTTACAC 909	790 AAACAAAAGGAAAAGAAATGGAAACAACAACAATGGAGAAAAAAACGTTGGGAAACACAACAA 849	730 GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG 789	670 AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729	610 GTGAAGTGTCACGATCGTCATTTGATTTTCATATTGACACCGGAAGAAGTAGATACA 669	550 CCAACAGATGGATATGCTCCCGATATGTATGCATGCCCCGCAAAATATAGATAG	490 TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549	430 AAAGAAATTGATGATTCAATGATTTCCAAATGATTTGGCCTATATGCAGCCTAATCCT 489		310 TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369	250 CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA 309	2230 GAGATAAACGGAGAAAATGGATGGGCGGCAAGTACGGGAATTGAGATTGTAGAAGGGGAT 2289

Query Match 18.0%; Score 303; DB 2; Length 3414; Best Local Similarity 53.5%; Pred. No. 8.1e-67; Matches 784; Conservative 0; Mismatches 600; Indels 81; Gaps 4; Qy 28 AAAAATÄCGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTATA 87	; ORGANISM: Bacillus thuringiensis ; ORGANISM: Bacillus thuringiensis ; STRAIN: kumamotoensis ; INDIVIDUAL ISOLATE: HD867 ; IMMEDIATE SOURCE: ; LIBRARY: Lamdagem (TM)-11 library of J.M. Fu ; CLONE: 867 US-07-973-320-3	ELEGTH: 3414 base pairs TYPE: NUCLEIC ACID STRANDEDNESS: double TOPOLOGY: linear MOLECULE TYPE: DNA (genomic) HYPOTHETICAL: NO ANTI-SENSE: NO	RECISTRATION NUMBER: 31,794 REGISTRATION NUMBER: 31,794 REFERENCE/DOCKET NUMBER: WA68.C1 FILECOMMUNICATION INFORMATION: TELEPHONE: 904-375-8100 TELEFAX: 904-375-800 INFORMATION FOR SEQ ID NO: 3: CEDIENCE CURBSCIEGE: 100.	320	CITY: Galnewylife ; STATE: FL COUNTRY: USA ZIP: 32606 ; COMPUTER READABLE FORM: ; MEDIUM TYPE: Floppy disk ; COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS ; SOFTWARE: Patentin Release #1.0. Version #1.25	FATERLI INCORMATION: GENERALI INCORMATION: APPLICANT: Payne, Jewel M. APPLICANT: Fu, Jenny M. FITLE OF INVENTION: No. 5286486el Bacillus thuringiensis Gene FITLE OF INVENTION: Encoding a Coleopteran-Active Toxin NUMBER OF SEQUENCES: 4 CORRESPONDENCE ADDRESS: ADDRESSEE: David R. Saliwanchik STREET: 2421 N.W. 41st Street, Suite A-1	Se - 0	Qy 1324 TCTTGCGAAGAAGGATATATGACAAAAACA 1353
Qy Qy	- - 02 - 03 - 04 - 05 - 05 - 05 - 05 - 05 - 05 - 05 - 05	B & B 4	\$ \$ \$ \$ \$ \$	S	O B Q B Q	S	\ \text{\$\frac{1}{2} \text{\$\frac{1} \text{\$\frac{1} \text{\$\frac{1} \text{\$\frac{1} \text{\$\frac{1} \text{\$\frac{1} \$\fi	дb
1033 GCACGTATCCATGCAAGGTTATAATTTATATGCATGCACGAAATGCTCATAACCAAATGGTGAC 1092	913 CATATTACHTAGATCAFATCCAAAACGCTGATCGACTGGTACAGTCGATTCCCTATGTA 972		759 GANAGANATTGANAGANGAGATGGAGANANANAGCTTTGGANAGCATGAGAAGCTTATGAT 858	2494GATGAAAATCCAAGTTCAGAATGTAGTTCGATGCAAGATTTTG 2541 619 CACGATCGTCATTTGATTTCATATTGACACCGGAGAAGTACAAATACAAAT 678	439 GAIGCTALCAIGAIGITCAMAIGAITHAGCCIANAIGAICAICHAGAGA 2460 2401 AGAACATTGGATGTTCTGATAATCTATTACCAGATATTCTCCCTGAGAATACATGTGGA 2460 499 GATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACAGAT 558	319 TATATCTGTCAAAAATATAGATGAGTCTAAATTTTTCAGGTACCAATGATGACGACACCAACACA 2280 319 TATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAAGA 378	88 GAATGTANTGTCAGANGAACAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAAAA 147	

```
RESULT 13
US-07-973-320-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Applic
Patent No. 5286486
                                                                                                                                                                                                      CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/788,638
FILING DATE: '6-NOV-1991
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: MA68.C1
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION: 904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Payne, Jewel M.
APPLICANT: Fu, Jenny M.
TITLE OF INVENTION: No. 5286486el Bacillus thuringiensis
TITLE OF INVENTION: Encoding a Coleopteran-Active Toxin
NUMBER OF SEQUENCES: 4
                                                                                                                                             TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
MOLECULE TYPE: I
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/973,320 FILING DATE: 19921106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
COPPUTER: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                         TYPE: NUCLEIC ACID STRANDEDNESS: doub TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: US
ZIP: 32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/07973320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCATCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G-----AAGGATATATGACAAAAAACAGTAGAGGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATATAACGATTACGGATGAAGAAGGGCATACAGTTCAATTGAGATTTACTGCATGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTATAGAGTTATTTTTGATGGAAG 3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGATACAGAGAAAGTGCATATAGAAATAGGCGAAACAGAAGGAATATTCCTGGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGAT 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGATTÇATGCATCTAATGCGTTTATATCCGGTTATATTACAAAAGAACTGGAATTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACTTCTTGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCAAGACCGTGGGTATATCTTACGTGTAACAGCGCGCAAGATAGGAATTGGGGGAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCTGGAAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGAATAACGTATTAGTTCTTAACAATTGGGATGCACAAGTATTACAAAACGTAAAACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCATGCT 1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCCTCAATGGCTTATCCGATTGGATTGTAACATCTGACGTAAAGGTACAAGAAGAAAAT
                                                                                                                                 3414 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: David R. Saliwanchil
2421 N.W. 41st Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                       ĕ
                                                         DNA
                                                                                             double
                                                       (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saliwanchik
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Suite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3081
                                 B
                                                                 S
                                                                                                               문
                                                                                                                                               S
                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-07-973-320-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 53.4 Matches 782; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Bacillus organism: dakota STRAIN: dakota INDIVIDUAL ISOLATE: IMMEDIATE SOURCE: LIBRARY: Lamdagem ('CLONE: 511
                                                                                                                                                                                          2662
                                                                                                                                                                                                                                                                      2602
                                                                                                                                                                                                                                                                                                                                               2542
                                                                                                                                                                                                                                                                                                                                                                                                                         2494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2041 GATTGTÁTATCÁGGGGÁTTTATÁTCCCAATGÁGÁÁACGCGAACTACAAAATCTAGTCAAA
                                                                                                                                                     799
                                                                                                                                                                                                                                739
                                                                                                                                                                                                                                                                                                            679
                                                                                                                                                                                                                                                                                                                                                                                   619
                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148 CTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCTGGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             88 GAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAATAAAA 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28 AAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTTCTATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TACGCAAAACGTTTGAGCTATTCCCCGTAATTTACTTCTAGATCCCACATTCGATTCTATT
CATATTACTTTAGATCATATTCAAAACGCTGATCGACTGGTACAGTCGATTCCCTATGTA 972
                                                                                                                                           GAAAAGAAATGGAAACAACACATGGAGAAAAAACGTTGGGAAACACAACAAGCCTATGAT 858
                                                                                                                                                                                                                  CTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTGAAACAAAAG 798
                                                                                                                                                                                                                                                                      TTAGGAATTTGGGTGTTGATTAAAATTTCGACATTAGAAGGATATGCGAAATTTGGAAAT
                                                                                                                                                                                                                                                                                                                                               CACGATCGTCATCCATTTGATTTTCATATTGACACCCGGAGAAGTAGATACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTGGA 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATTCATCTGAGGAGAATGGTTGGTATGGAAGTAATGGTATTGTGATTTGGAAATGGGGAT 22
                                                                                                                                                                                                                                                                                          GTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACAGTAGGGAAT 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATCTCTACCAAAAAATAGATGAATCCAAACTCAAAGAATATTCACGCTATAAACTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATATCTGTCAAAAAATAGATGAGTCTAAAATTAAAACCATATACACGTTATCGAGTAAGA 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATTGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAGGAAAA
                                                                         CCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACACT-----AT
                                                                                                                 GAAACGAAGTGGAGAAACAAGTTAGCCCAAATGACAACGGAAACACAAGCGATTTATACA
                                                                                                                                                                                          CTAGAAGTGATTGAAGATGGCCCAGTTATTGGAGAAGCATTAGCCCCGTGTGAAGCGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                         -----GATGAAAATCCAAGTTCAGAATGTAGTTCGATGCAAGATGGAATTTTTG 2541
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACCAAATCGCTGCGCGCACAACAATACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACAGAT 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAACATTGGATGTTTCTGATAATCTATTACCAGATATTCTCCCTGAGAATACATGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTTTTATCGAAAGTAGTCAGGATTTAGAAGCTTATGTGATTCGCTATGATGCAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGTÄTTCÄAAGGTAACTATTTAATTTTTTCÄGGTACCAÄTGATACACAATATCCAACA 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTCTACAGATGCGT-----GGAGCACGAGACATATATGGAACTCTATTTCCAACC 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAATGCACTCCAAAAATACGTGACAGATTATAAAGTGGACCAGGTTTCAATTTTAGTG
                                   CGAGCAAAACAAGCGCTGGATAATCTTTTTGCGAATGCACAAGACTCTCACTTAAAAATA 284:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17.8%;
53.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TM) -11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 299.8; DB 2;
Pred. No. 5.2e-66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                얁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3414;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                   678
                                                                           912
                                                                                                                 278
                                                                                                                                                                                                                                                                        2661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      207
```

ş 밁 δ 밁 S 밁 5 밁 Ś 밁 S 밁

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-08-315-468-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ર્ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3, Application US/08315468 Patent No. 5554534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08,
FILING DATE: 01 FEB 1993
APPLICATION NUMBER: 07/82
FILING DATE: 30-JAN-1992
                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Michaels, Tracy Ellis
APPLICANT: Poncerrada, Luis
APPLICANT: Narva, Kenneth E.
APPLICANT: Narva, Kenneth E.
TITLE OF INVENTION: Process for Controlling Scarab
TITLE OF INVENTION: with Bacillus thuringiensis Iso
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                       SOFTWARE: Patentin Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                CITY: Gainesville
                                                                                                                                  FILING DATE:
                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2842
APPLICATION DATA:
                                                                                                                                                                                                                                                                                           32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTATAGAGTTATTTTTGATGGAAG 3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCATCGAGTTGCTTTGTATGCAAG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAGATACAGAGAAAGTGCATATAGAAATAGGCGAAACAGAAGGAATATTCCTGGTAGAA 3381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGAAAGTGATCGTGTACGGATTGAAATAGGAGAAACCGAAGGTACATTTTATATAGAT 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATTGATGCATCTAATGCGTTATATCCGGTTATATTACAAAAGAACTGGAATTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATATAACGATTACTGATGAAGAAGGGCATACAGATCAATTGAGATTTACTGCATGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATGTAACGATGATGGATTGTAATGGAAAGCAGGAAAACACTTAAGTTCACTTCTTGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATCAAGACCGTGGGTATGTCTTACGTGTAACAGCGCGCAAGATAGGAATTGGGGAAGGA 3201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGAAGGACCTGGAAAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGAATAACGTATTAGTTCTTAACAATTGGGGATGCGCAAGTATTACGAAACGTAAAACTC 3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAACTTGCATGCT 1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAACAAATGGAT 1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAGAGTACAACGAGCATTTCAATTATATGATGTACGAAATGTTGTGCGTAATGGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACAAATGGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATATGTCATGGTTATCTGTTGCTTCCAGGTGTAAATCACCCTATTTTTACAGAGTTAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAAGAGTTAAAC 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCTCAATGGCTTATCCGATTGGATTGTAACATCTGACGTAAACGTACAAGAAGAAAAT
                                                                                                                                                                                                                                                                                                                                Ϋ́
                                                                                                                                                                                                                                                                                                           USA
            UMBER: 07/828,430
30-JAN-1992
                                                                          US/08/014,941
                                                                                                                                                    US/08/315,468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----AGGATATATGACAAAAACAGTAGAGGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pests
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1272
                                                                                                                                                                     á
                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                            á
                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-315-468-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity Matches 729; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 16-DEC-1991
ATTORNEY AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: MA73.CT
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 904-372-5800 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: D
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN: kumamotoensis
INDIVIDUAL ISOLATE: 51
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: dou
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                 2458
                                                                                                                                                                                                                                                                                           2398
                                                                                                                                                                                                                                                                                                                                                                      2338
                                                                                                                                                                                                                                                                                                                                                                                                                                                2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2218
                                                                                                                                    2506
                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                          310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142 ATAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTT----
                      610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22
GTGAAGTGTCACGATCGTCATCCATTTGATTTTCATATTGACACCGGAGAAGTAGATACA 669
                                                                                  CCTATTTTTAAAGGAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATACAAAAGATGGATTACAGCCAGGTGTAACGGATTATGAAGTAAATCAAGCGGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATT 81
                                                                                                                                    CCTCCTGTAAACAATGATGGTAGA-----
                                                                                                                                                                         TCATGTGGAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACA 549
                                                                                                                                                                                                                                           AAAGAAATTGATGCTATCATGAATGTTTCCAAAATGATTTGGCCCTATATGCAGCCTAATCCT 489
                                                                                                                                                                                                                                                                                             AGACTGAGAGGATTTGTGGGAAGTAGTCAAGGATTAGAAATTTATACGATTCGTCACCAA
                                                                                                                                                                                                                                                                                                                              CGAGTAAGAGGGTTTGTGGGAAGTAGTAAAGATTTGAAATTAATGGTAACACGTTACGGG 429
                                                                                                                                                                                                                                                                                                                                                                      TATCCAACGTATCTGTATCAAAAAGTAGAGGAAGGTGTATTAAAAACCATACACAAGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                TTTCCAACCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTAT 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTATTCAAAGGGCGTTATCTACGCCTACCAGGTGCGAGAGAAATAGATACGGAAACG 2337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGATAAATGGAGAAAATGGATGGACGGCAAGTACGGGAATTGAGGTTATAGAAGGGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGAGAGAGAGAAAACGACTTAGCGAGGCACGGAACTTACTACAAGATCCAGATTTCCAA 2217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGTGGAATGCCTATCGGATGATTTGTATCCAAATGAAAAACGATTGTTATTTGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      тстатадаатстатстсадатдаасаааатсстсаддаааааатаатдттатдддатдаа
                                                            TCAATCGATGCAGCGAACAAAAGTATGTGAATAGTCGTTTAGAAGTAGAAAAACCGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3507 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LambdaGEM-11(tm) library of L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacillus thuringiensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTGGGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAAT 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17.0%;
54.7%;
                                                                                                                                                                                                               -CGAATCGAATTGTAAAAATGTACCAGATGATTTACTGCCAGATGTA 2505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    50C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07/808,316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ٥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 286.6; DB 2
Pred. No. 1.2e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
ც
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Foncerrada
```

Indels Length 3507;

75;

Gaps

141

2097

197 2157

2590

2457

2397

```
RESULT 15
US-08-542-921-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    र्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                     Sequence 1, Application US/08542921
Patent No. 5736514
                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                       APPLICANT: IIZUKA, TOSHIHIKO
APPLICANT: TAGAWA, MICHITO
APPLICANT: ARAI, SATOSHI
APPLICANT: NIIZEKI, MASATSUGU
APPLICANT: NIYAKE, TOSHIRO
TITLE OF INVENTION: NOVEL BACILLUS STRAIN AND HARMFUL
TITLE OF INVENTION: ORGANISM CONTROLLING AGENTS
NUMBER OF SEQUENCES: 2
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT
STREET: 1755 S. JEFFERSON DAVIS HIGHWAY, FOURTH FLOOR
CITY: ARLINGTON
STATE: VIRGINIA
                               COUNTRY: USA
ZIP: 22202
                                                                                                                                                                                                                                                                                                                                                                                    3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAAAGAAGAACAACAGTGGAAGATTCAAATGACAAGAAGACGTGAAGAGACAGATAGA
                                                                                                                                                                                                                                                                                                                                                                                    GCAAGCGATTATG 3313
                                                                                                                                                                                                                                                                                                                                                                                                                    TCTTGCGAAGAAG 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAAAGGGTATGTAACGATGATGGATTGTAATGGAAAGCAGGAAACACTTAAGTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTACAGTTCAACCGAATCAAAGATATGTGTTACGAGTTACTGCAAGAAAAGAAGGGGGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCATGCTCAAGATCATCATGGATATGTGTTACGTGTGATTGCCAAAAAAAGAAGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAATGGATGGAGCTTCAGTATTAGTTCTATCAAATTGGAGCGCGGGGGTATCTCAAAAC 1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGGTGACTTTACACAAGGATTACAGGGATGGCACGCAACAGGAAATGCCGCGGTACAA 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGTTAACAGATCGACTCCAACAAGCCTGGGGATTGTATGATCAACGAAACGCTATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTTAAACGCACGTATCATGCAAGGTTATAATTTATATGATGCACGAAATGTCATAACA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTACGTGTATAACGAAATGTTCCCCAGAAATACCAGGAATGAACTATACGAAGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCTATGTATACCATAATTGGTTACCGAATGCTCCAGGTATGAACTATGATGTATATCAA 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAATCCGAATGTAGAGATTACAGATCTTACTGCGGCTCAAGATCTAATACAGTCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCATATTACTTTAGA-----TCATATTCAAAACGCTGATCGACTGGTACAGTCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGATACATGGCATCGAAACAAGCGGTAGATCGTTTATATGCCGATTATCAGGATCAGCAA 2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTATGATCCAGCAAAACAGGCTGTAGATGCATTATTTACAAATGAACAAGAGTTACAC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACAAAAGGAAAAGAAATGGAAAACAACACATGGAGAAAAAACGTTGGGAAACACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTGGAAATCTTGAATTGGTCGAAGAGGGACCTTTGTCAGGAGACGCATTAGAACGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAGGGAATCTAGAAGTCATTGAAGAAGGACCACTAACAGGTGAAGCATTGGCACATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGAAAATGCAGGAATATGGGTTGGATTTAAGATTACGGACCCAGAGGGATACGCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACAAATGTAGGTATTGATGTCTTATTAAAAATTTCTAATCCAGATGGATACGCTACA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAAGCG-----CATGAGTTCTCAATCCCTATCGATACAGGAGAGCTGGATTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CANATCATCATACATCTGTCCTTGTGATTCCANACTGGAATGAACAAGTTTCACAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGAGATTACCGAAATGAATTAAGTAATTGGAATACAACATCTGGTGTGAATGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2700
                                              S
                                                                             밁
                                                                                                         8
                                                                                                                                        밁
                                                                                                                                                                      S
                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-542-921-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Sim Matches 775;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                   2595
                                                                                                                                            2478
                                                                                                                                                                                                          2418
                                                                                                                                                                                                                                                                       2358
                                                                                                                                                                                                                                                                                                                                                                                                                                 143
                                                                                                            437
                                                                                                                                                                           377
                                                                                                                                                                                                                                        317
```

```
APPLICATION NUMBER: US/08/542,921
FILING DATE: 13-OCT-1995
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 276082/94
FILING DATE: 14-OCT-1994
ATTORNEY/AGENT INFOWATION:
NAME: OBLON, NORMAN F
REGISTRATION NUMBER: 24.618
REFERENCE/DOCKET NUMBER: 49-209-0
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 413-3000
TELEPHONE: (703) 413-220
TELEPAX: (703) 413-220
TELEPAX: 24.8855 OPAT UR
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
ORIGINAL SOURCE:
ORGANISM: Bac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN: N141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 3759 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2298 CAATCAATAGTÁCÁGAAGAGÁÁTGGCTGGÁAGGCAAGTAACGGTGTTACTATTAGCGAGG 2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2178 TAGTGTCATGCTTATCCGATGAACAATATGGGCATGACAAAAAGATGTTATTGGAAGCGG 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83 CTATAGAATGTATGTCAGATGAACAAAATCCTCAGGAAAAAATAATGTTATGGGATGAAA 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23 GTACGAAAAATACGTTAAAAATAGAAACGACAGATTATGAAATAGATCAAGCGGCCATTT 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                  ATGGGTTCGTGAAGAGTAGTCAAGATTTAGAAATTGATCTCATTCACTATCATAAAG----
                                                                                                                                                                                                                                                          GCGGTCCATTCTTTAAAGGTCGTGCACTTCAGTTAGCAAGCGCAAGAGAAAAATTATCCAA
                                                GAGATTATCGCTGTGAATCATCGTCTCAGTATGTGAGCCAAGGGTATCCTACACCAACAG 556
                                                                                                                                              TTGATGCTATCATGAATGTTCCAAATGATTTGGCCTATATGCAGCCTAATCCTTCATGTG 496
                                                                                                                                                                                                                                                                                                                              CATACATTTATCAAAAAGTAGATGCATCGGTGTTAAAGCCCTTATACACGCTATAGACTGG 2477
                                                                                                                                                                                                                                                                                                                                                              CCTATATCTGTCAAAAAATAGATGAGTCTAAATTAAAACCATATACACGTTATCGAGTAA 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAATGATTGGACATTCGGTAATGATATTATCATAGGATCCAATAATCCTATTTTTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAAACTGGCAAAACAACTTAGTCAGTCTCGTAATCTACTCCAAAATGGAGACTTTTCTG 202
GCAGTGGAATGAATCGATGTGAGGAACAACAGATGGTAAATGCGCAACTGGAAACAGAAC 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAAATTTCTACAGATGCGTGGAGCACGAGACATATATGGAACTCTA-----TTTCCAA 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTACAAGGGACGGATTACAGGTAAATGTGACAGATTATCAAGTGGACCAAGCGGCAAATT
                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
47..3556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacillus thuringiensis var. japonensis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16.1%;
52.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 271.4; DB 2;
Pred. No. 8.5e-59;
0; Mismatches 626;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 3759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

S

2417

2594

Search completed: February 15, 2006, 05:38:24 Job time : 334 secs

B & B & B & B

